AEROSPACE REPORT NO.
ATR-72(7301)-1, VOL. II

NASA REPORT NO. ~~CR114467~~ CR114467

AVAILABLE TO THE PUBLIC

Interim Report
Study of Short-Haul High-Density V/STOL Transportation Systems
Volume II Appendices

Prepared by H. L. SOLOMON
Air Transportation Group

JULY 1972

for Ames Research Center
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Moffett Field, California 94035

Contract No. NAS 2-6473

Civil Programs Division
THE AEROSPACE CORPORATION

209 p

Aerospace Report No.
ATR-72(7301)-1
Volume II

NASA Report No. CR-114467

INTERIM REPORT

STUDY OF SHORT-HAUL HIGH-DENSITY V/STOL TRANSPORTATION SYSTEMS

Volume II Appendices

Prepared by

H. L. Solomon
Air Transportation Group
Civil Programs Division
THE AEROSPACE CORPORATION

July 1972

Prepared under Contract No. NAS 2-6473 by
THE AEROSPACE CORPORATION
El Segundo, California

Prepared for Ames Research Center
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Moffett Field, California 94035

NASA Report No. CR-114467

Aerospace Report No.
ATR-72(7301)-1
Vol. II

INTERIM REPORT

STUDY OF SHORT-HAUL HIGH-DENSITY V/STOL TRANSPORTATION SYSTEMS

Volume II Appendices

Prepared by

H. L. Solomon
Air Transportation Group

Approved by

Earl R. Hinz
Associate Group Director
Air Transportation Group
Civil Programs Division

A. B. Greenberg
General Manager
Civil Programs Division

ACKNOWLEDGEMENTS

This study, performed for the Ames Research Center under NASA Contract No. NAS 2-6473, is part of the NASA study of V/STOL aircraft applications as a possible means of solving the growing air transportation problems in the U.S. The present study has been concerned with an examination of the potential economic viability of alternative STOL concepts and an estimate of the impact of technological changes to a given concept. Appreciation is extended to Mr. Elwood Stewart, the NASA Technical Monitor of the study, for his assistance and guidance provided.

Particular acknowledgement to members of the technical staff of The Aerospace Corporation for valuable contributions is given to:

Jon R. Buyan and Daniel J. Cavicchio, Jr.
(Transportation System Simulation Program development and production)

L. R. Bush
(Arena characterization)

Keith R. Smith and John M. Lyons
(Aircraft characteristics)

Joseph A. Neiss
(Economics)

Richard R. Bruce
(Weather analysis)

Ralph E. Finney
(Ground systems)

CONTENTS, VOLUME 2

APPENDICES

NOMENCLATURE

Acft	aircraft
ALF	average load factor
ASM	available seat miles
ATA	Air Transport Association
AW	Augmentor Wing
BASAR	Bay Area Study of Airport Requirements
BATSC	Bay Area Transportation Study Commission
Boeing 1971	Boeing Co. 1971 Technique
BLC	boundary layer control
BT	block time
CAB	Civil Aeronautics Board
Calif. Corr.	California Corridor
CAP	capacity
CATS	Chicago Area Transportation Study
CBD	central business district(s)
CHIC	Chicago
CLEV	Cleveland
COHARE	O'Hare (Chicago) Airport
CTOL	conventional takeoff and landing (aircraft)
D	domestic
DEP	departure(s)
DET	Detroit

Dist.	distance(s)
DMON	San Diego Montgomery field
DOC	direct operating cost(s)
DST	Deflected Slipstream turboprop
EBF	Externally Blown Flap
Enpl/OB Ratio	Passengers Enplaned/Onboard Ratio
FAA	Federal Aviation Administration
FC	first class
FCBD	San Francisco Crissy Field Airport
FCONC	Concord Airport
FOAK	Oakland (Cal.) International Airport
FPALO	Palo Alto Airport
fpm	feet per minute
FSFO	San Francisco International Airport
FSJC	San Jose (Cal.) Airport
G&A	general and administrative
gpm	gallons per minute
h	hour(s)
IFR	instrument flight rule(s)
IOC	indirect operating cost(s)
jetport	jet-aircraft (air)port
k	knot (1 n mi/h)
LA	Los Angeles
LARTS	Los Angeles Regional Transportation Study

LARTS STAT	LARTS Statistical Area
LAX	Los Angeles International Airport
LBUR	Burbank (Cal.) Airport
LCBD	Los Angeles Chavez Ravine STOL port
LF	load factor
LLAX	Los Angeles International Airport
LOXN	Oxnard (Cal.) Airport
LSFV	Los Angeles San Fernando Valley Airport
mi	statute mile(s)
M.S., MS	modal split
n mi	nautical mile(s)
NASA	National Aeronautics and Space Administration
NOACA	Northeast Ohio Areawide Coordinating Agency
No. Pax.	number of passengers
NPA	National Planning Association
O&D	origin and destination
Pan American NEC	Pan American Northeast Corridor
PSA	Pacific-Southwest Airline
PUC	Public Utilities Commission
RADS	Regional Analysis Districts
RNAV	Area Navigation
ROI	return on investment
RPM	revenue passenger miles
RSM	revenue seat miles

RVR	runway visual range
SAC	Sacramento
SATS	Sacramento Area Transportation Study
SD	San Diego
SDMATS	San Diego Metropolitan Area Transportation Study
SF	San Francisco
SFC	specific fuel consumption
SHP	shaft horse power
SMSA	standardized metropolitan statistical area
SRI	Stanford Research Institute
STOL	short takeoff and landing (aircraft)
STOLport	short takeoff and landing (air)port
TALUS	(Detroit Regional) Transportation and Land Use Study
TC	tourist class
TSS	Transportation Systems Simulation
VFR	visual flight rules
V/STOL	vertical and short takeoff and landing (aircraft)
VTOL	vertical takeoff and landing (aircraft)

APPENDIX A
ARENA CHARACTERISTICS

FIGURES

TABLES

APPENDIX A

ARENA CHARACTERISTICS

This Appendix contains detailed data and figures which were judged to be too voluminous for inclusion in the body of this report. It includes zonal maps for each region of both the California and the Midwest Corridors as well as port and service path characteristics.

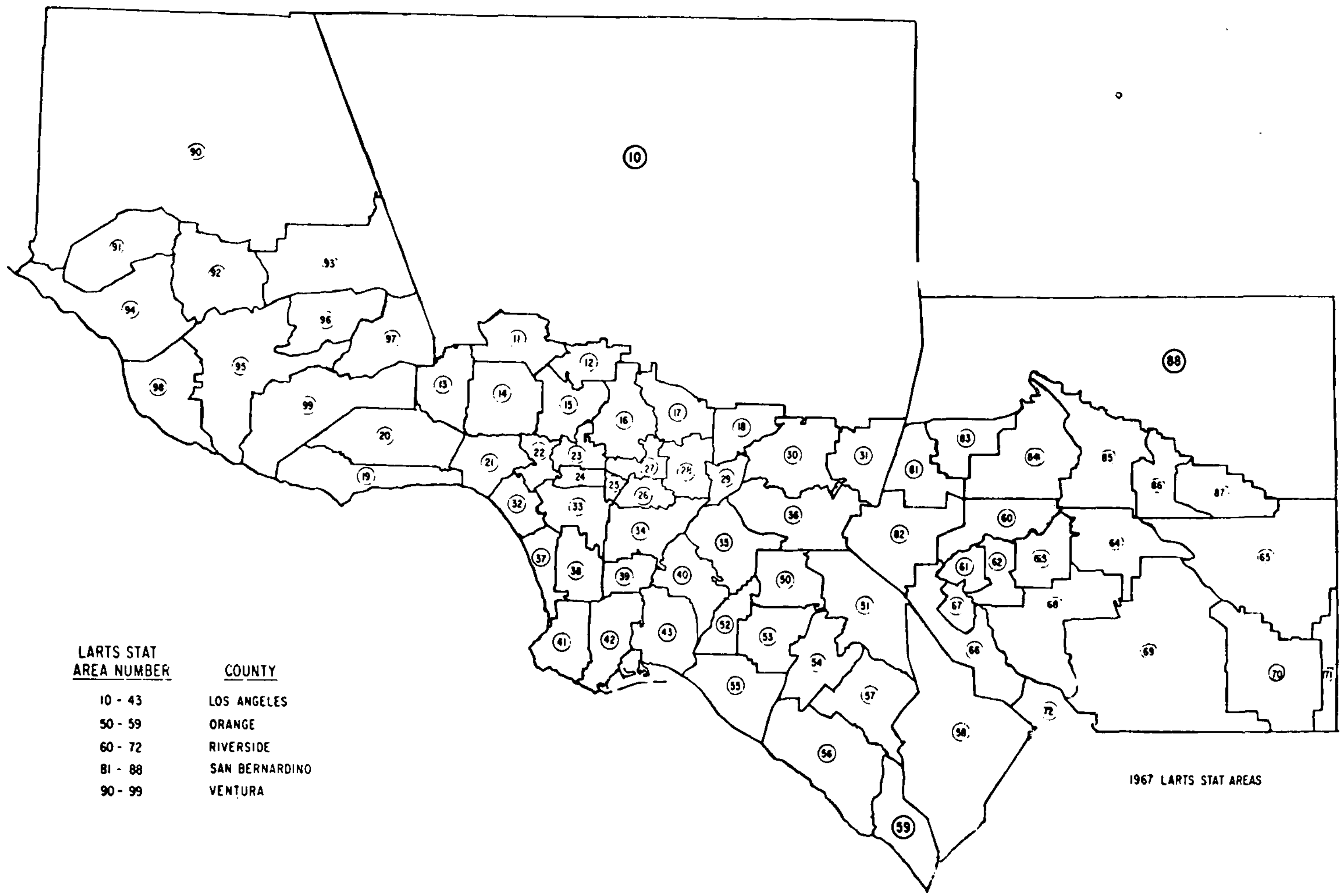
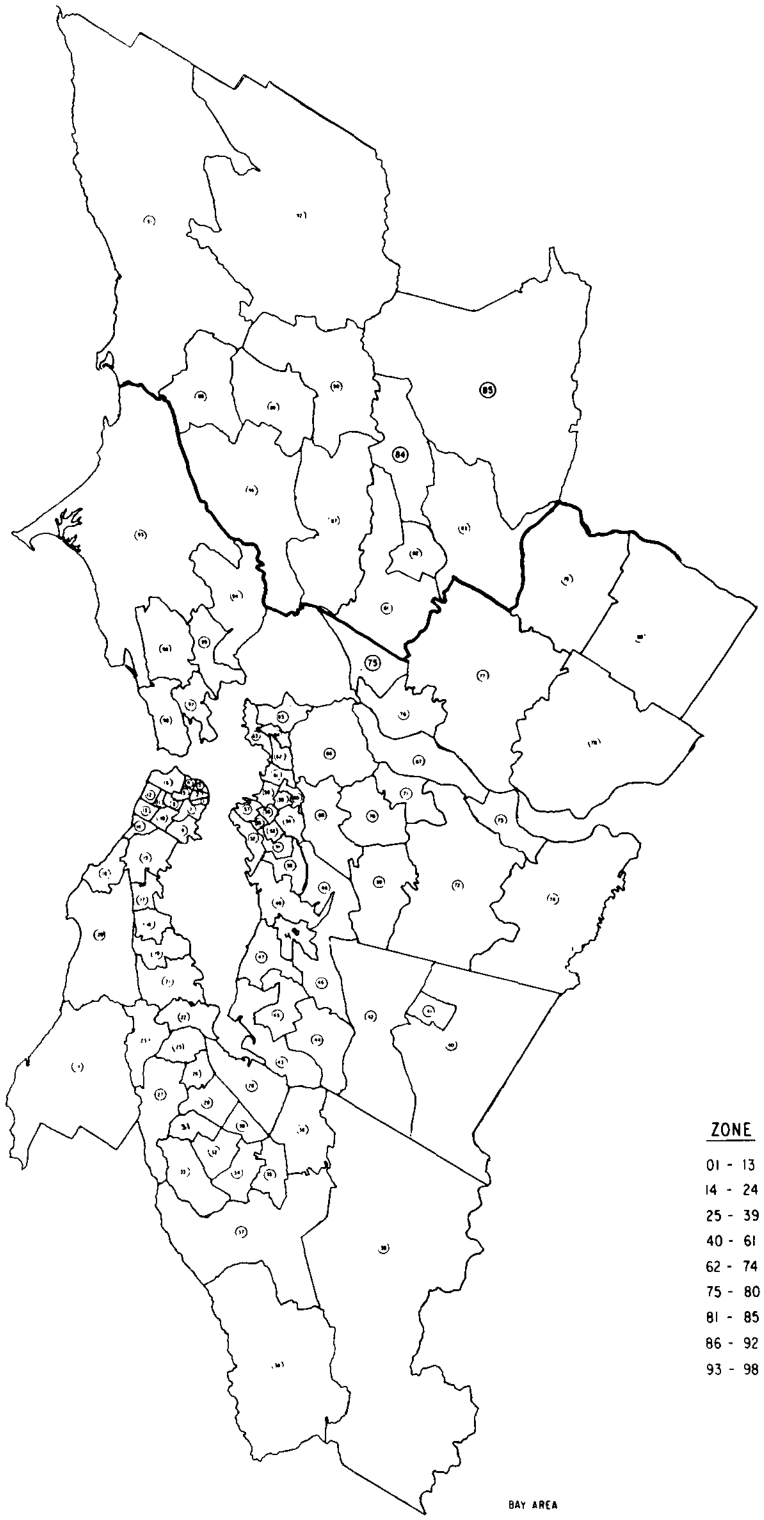


Figure A-1. Los Angeles Region



ZONE	COUNTY
01 - 13	SAN FRANCISCO
14 - 24	SAN MATEO
25 - 39	SANTA CLARA
40 - 61	ALAMEDA
62 - 74	CONTRA COSTA
75 - 80	SOLANO
81 - 85	NAPA
86 - 92	SONOMA
93 - 98	MARIN

Figure A-2. San Francisco Region

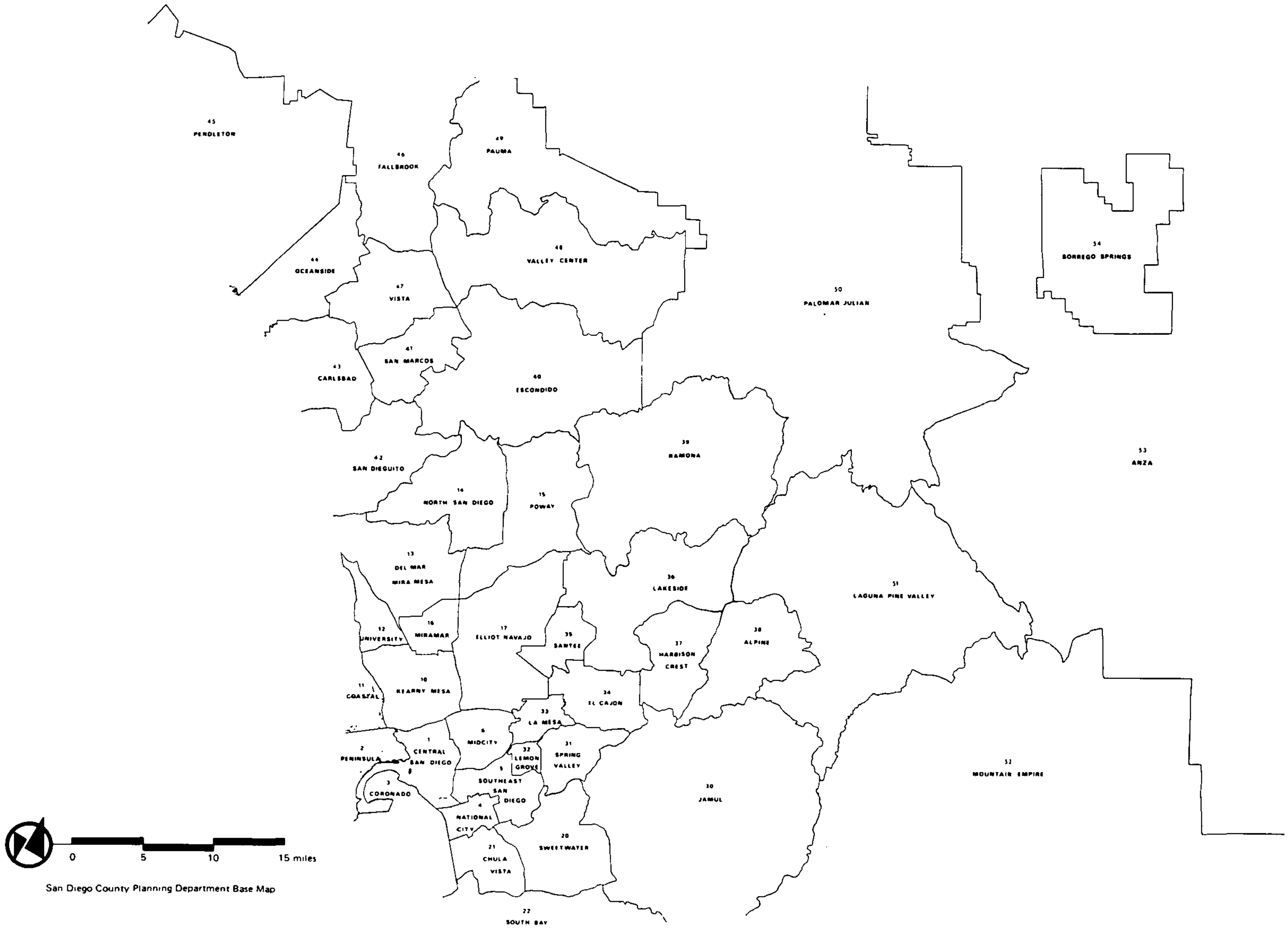


Figure A-3. San Diego Region

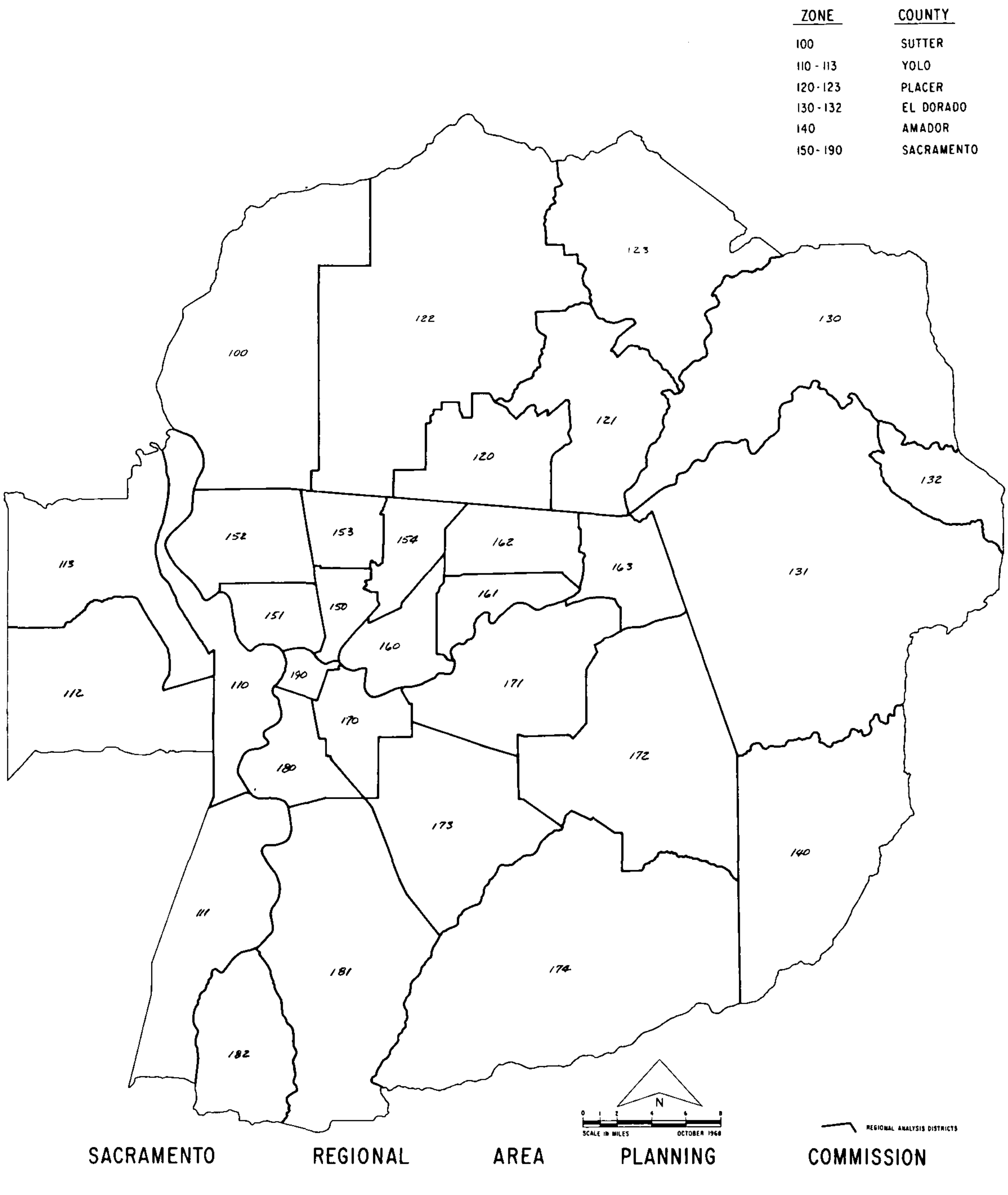


Figure A-4. Sacramento Region

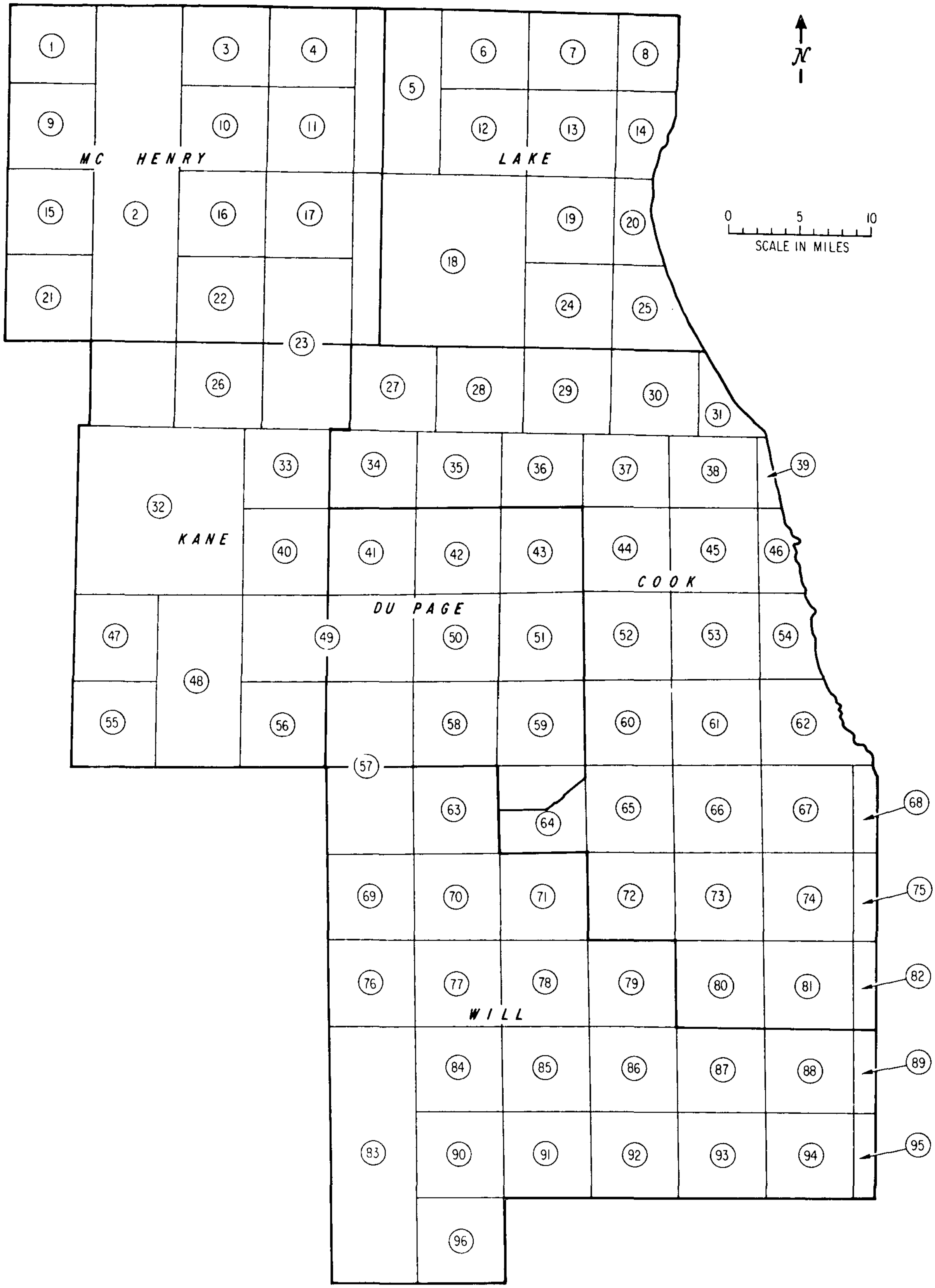


Figure A-5. Chicago Region

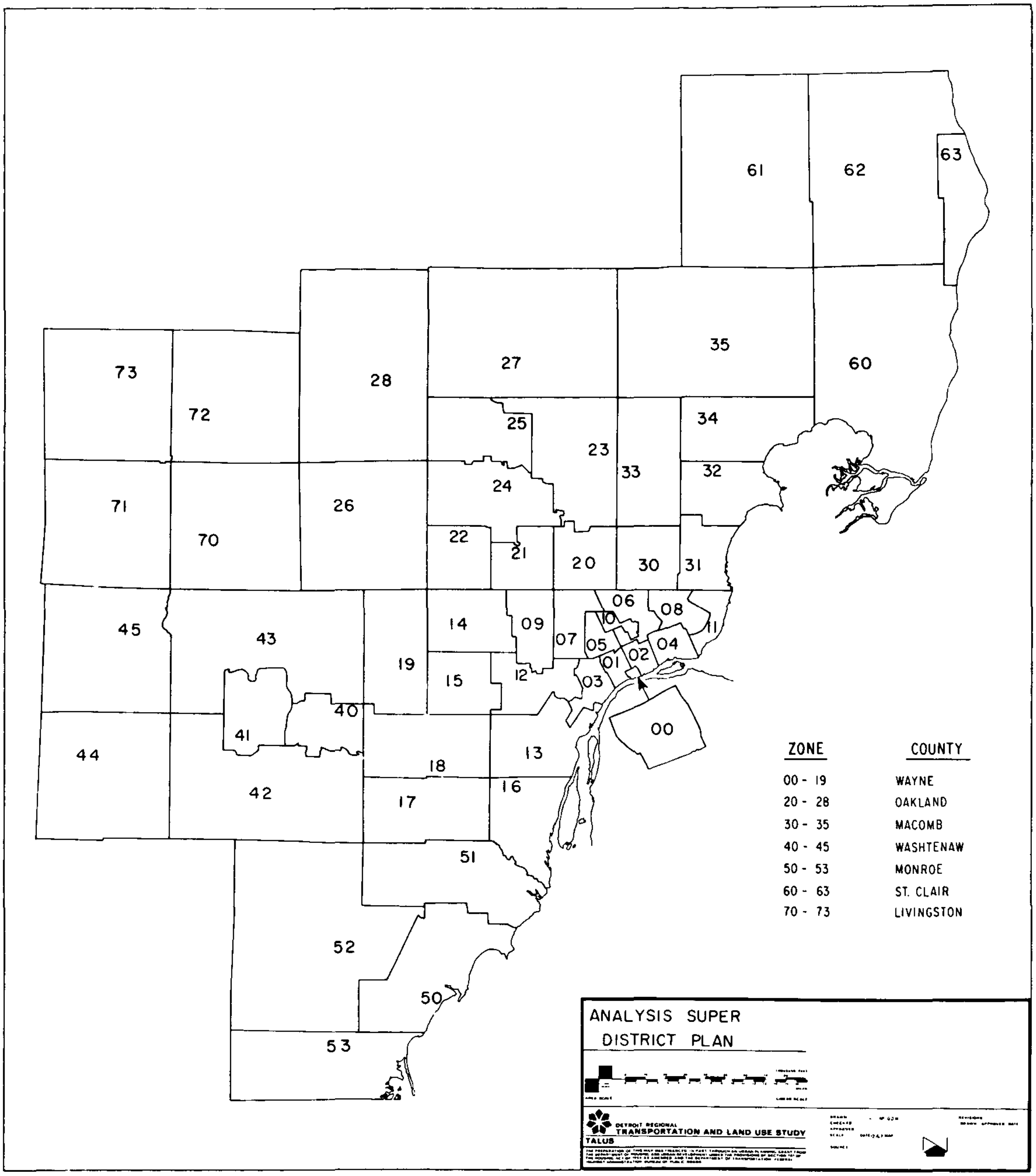


Figure A-6. Detroit Region

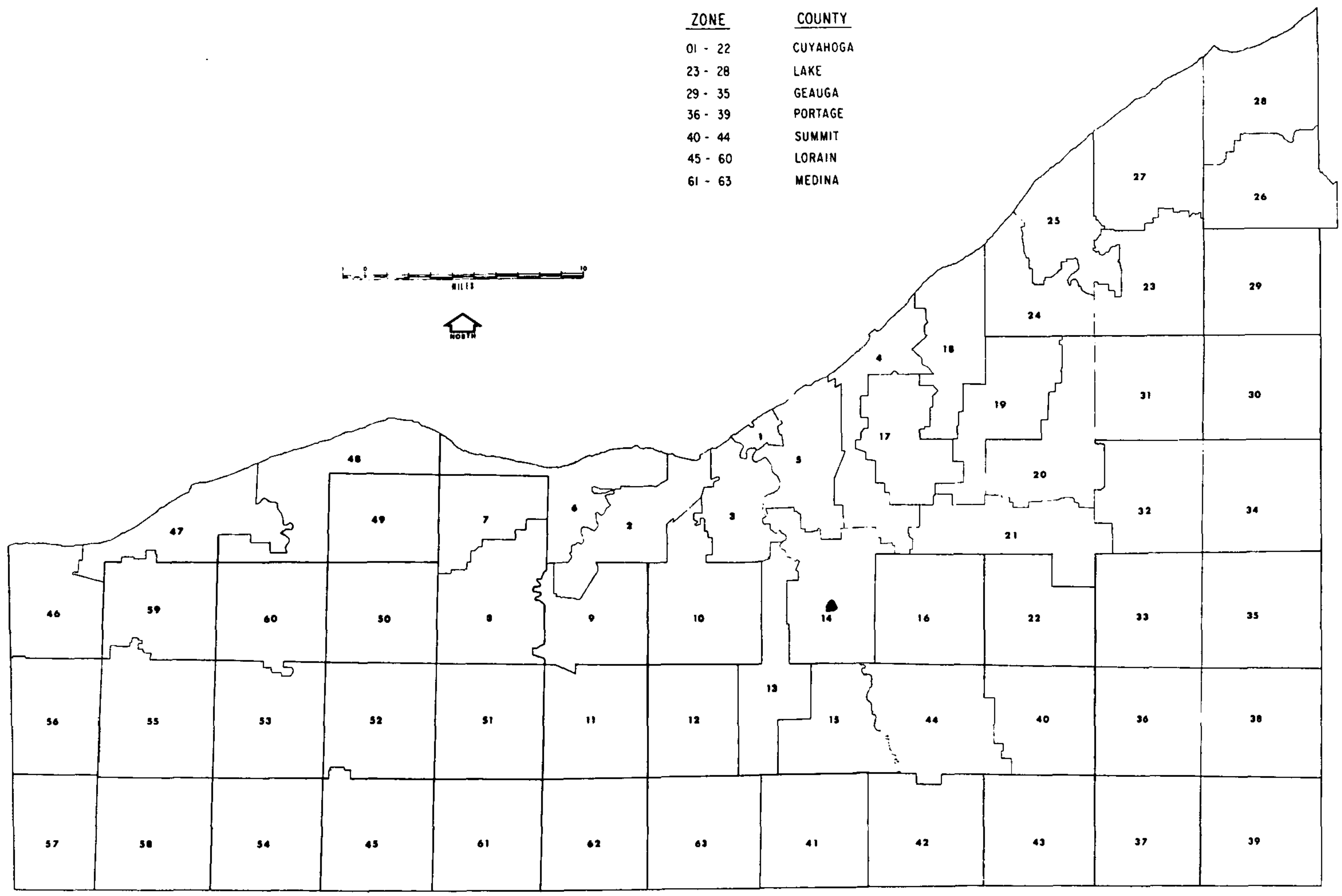


Figure A-7. Cleveland Region

Table A-1. California Corridor Port Characteristics

Mode	Port Abbreviation	Port Description	Processing Time (hr)	Parking Time (hr)	Parking Cost ($/day)
Los Angeles					
CAR	LGOR	Gorman	0.0	0.0	0.0
	LSFV	San Fernando	0.0	0.0	0.0
	LOXN	Oxnard	0.0	0.0	0.0
	LSNA	Santa Ana	0.0	0.0	0.0
	LRIV	Riverside	0.0	0.0	0.0
	LCAP	Capistrano	0.0	0.0	0.0
CTOL	LLAX	L.A. Int'l	0.384	0.15	3.00*
	LBUR	Burbank	0.284	0.067	3.00
	LONT	Ontario	0.284	0.067	1.50
	LLGB	Long Beach	0.284	0.067	1.00
	LSNA	Santa Ana	0.284	0.067	2.00
BUS	LCBD	Downtown	0.18	0.08	2.40
	LLGB	Long Beach	0.18	0.08	0.50
	LSNA	Santa Ana	0.18	0.08	0.50
	LSB	San Bernardino	0.18	0.08	0.50
RAIL	LCBD	Downtown	0.18	0.08	1.75
Sacramento					
CAR	SCBD	Downtown	0.0	0.0	0.0
	SDAV	Davis	0.0	0.0	0.0
	SGALT	Galt	0.0	0.0	0.0
CTOL	SSMF	Metropolitan	0.284	0.10	1.50*
BUS	SCBD	Downtown	0.18	0.08	2.20
San Diego					
CAR	DCBD	Downtown	0.0	0.0	0.0
	DOCN	Oceanside	0.0	0.0	0.0
	DRIV	North Central	0.0	0.0	0.0
CTOL	DSAN	Lindburg	0.284	0.1	2.00
BUS	DCBD	Downtown	0.18	0.08	1.50
	DOCN	Oceanside	0.18	0.08	1.00
RAIL	DCBD	Downtown	0.18	0.08	1.00

*First day rate. Additional days at a different rate.

Table A-1. California Corridor Port Characteristics (Cont)

Mode	Port Abbreviation	Port Description	Processing Time (hr)	Parking Time (hr)	Parking Cost ($/day)
San Francisco					
CAR	FSJ	San Jose	0.0	0.0	0.0
	FVAL	Vallejo	0.0	0.0	0.0
	FDAV	Davis	0.0	0.0	0.0
CTOL	FSFO	S.F. Int'l	0.384	0.15	2.75*
	FSJC	San Jose	0.284	0.067	2.50*
	FOAK	Oakland	0.284	0.10	2.00
BUS	FCBD	Downtown	0.18	0.08	3.50
	FOAK	Oakland	0.18	0.08	1.00
	FSJ	San Jose	0.18	0.08	0.50
	FWOD	Woodland	0.18	0.08	0.50
RAIL	FCBD	Downtown	0.18	0.08	2.00

*First day rate. Additional days at a different rate.

Table A-2. Midwest Triangle Port Characteristics

Mode	Port Abbreviation	Port Description	Processing Time (hr)	Parking Time (hr)	Parking Cost ($/day)
Chicago					
CAR	CCHI	East State Line	0.0	0.0	0.0
CTOL	COHARE	International	0.30	0.33	2.25
	CMDWAY	Midway	0.15	0.10	2.25
	CMIEGS	Miegs	0.13	0.07	2.50(a)
BUS	CCBD	Downtown	0.18	0.08	3.50
RAIL	CCBD	Downtown	0.18	0.08	2.50
Detroit					
CAR	DCHL	Chelsea	0.0	0.0	0.0
	DROC	Rockwood	0.0	0.0	0.0
	DTOL	Toledo	0.0	0.0	0.0
CTOL	DMETRO	Metropolitan	0.20	0.17	3.00(b)
	DCITY	City Airport	0.13	0.07	1.50
BUS	DCBD	Downtown	0.18	0.08	3.00
RAIL	DCBD	Downtown	0.18	0.08	1.00
Cleveland					
CAR	VAMH	Amherst	0.0	0.0	0.0
	VLOR	Lorraine	0.0	0.0	0.0
CTOL	VHOPKN	Hopkins	0.17	0.17	2.25
	VBURKE	Lakefront	0.13	0.06	1.50
BUS	VCBD	Downtown	0.18	0.08	1.25
RAIL	VCBD	Downtown	0.18	0.08	2.00

(a) estimated for 1980
(b) First day rate. Additional days at a slightly lower rate.

Table A-3. California Service Path Characteristics

Mode	Service Path	Cost ($)	Time (hr)	Frequency (no. departures/hr)
Los Angeles-San Francisco				
CAR	LGOR-FSJ	12.32	5.65	∞
	LSFV-FSJ	13.80	6.26	∞
	LOXN-FSJ	12.76	6.08	∞
CTOL	LLAX-FSFO	16.50	1.0	2.43
	LLAX-FSJC	16.50	0.83	0.72
	LLAX-FOAK	16.50	0.92	0.75
	LBUR-FSFO	16.50	0.83	0.57
	LBUR-FSJC	16.50	0.75	0.50
	LBUR-FOAK	16.50	1.17	0.50
	LONT-FSFO	18.00	1.03	0.50
	LONT-FSJC	21.60	0.92	0.36
	LONT-FOAK	21.60	1.32	0.29
	LSNA-FSFO	21.60	1.0	0.43
	LSNA-FSJC	21.60	0.92	0.43
	LSNA-FOAK	21.60	1.0	0.50
	LLGB-FSFO	18.00	1.03	0.43
BUS	LCBD-FCBD	13.50	9.0	1.35
RAIL	LCBD-FCBD	16.00	10.67	0.07
Los Angeles-Sacramento				
CAR	LSFV-SCBD	14.24	6.20	∞
	LSFV-SGALT	13.32	5.82	∞
CTOL	LLAX-SSMF	18.00	1.0	1.07
	LBUR-SSMF	21.00	1.53	0.36
BUS	LCBD-SCBD	12.50	9.58	0.77
Los Angeles-San Diego				
CAR	LSNA-DOCN	2.00	0.82	∞
	LSNA-DCBD	3.52	1.40	∞
	LRIV-DCBD	3.88	2.0	∞
	LRIV-DRIV	2.04	1.07	∞
	LCAP-DOCN	1.04	0.42	∞
	LCAP-DCBD	2.56	1.0	∞

*1970 dollars

Table A-3. California Service Path Characteristics (Cont)

Mode	Service Path	Cost ($)	Time (hr)	Frequency (no. departures/hr)
CTOL	LLAX-DSAN	8.29	0.50	1.80
	LBUR-DSAN	8.00	0.50	0.40
	LSNA-DSAN	8.00	0.42	0.47
BUS	LCBD-DCBD	4.36	2.5	1.38
	LCBD-DOCN	3.38	1.75	1.38
	LLGB-DCBD	3.84	2.25	0.54
	LSNA-DCBD	3.49	1.90	0.69
	LSB-DCBD	4.89	2.33	0.54
RAIL	LCBD-DCBD	4.75	2.75	0.20
San Diego-Sacramento				
CAR	DOCN-SCBD	18.56	8.02	∞
	DOCN-SGALT	17.64	7.63	∞
	DCBD-SCBD	20.12	8.62	∞
	DCBD-SGALT	19.20	8.23	∞
CTOL	DSAN-SSMF(a)	25.00	1.67	0.13
	DSAN-SSMF(b)	27.00	2.47	0.37
BUS	DCBD-SCBD	16.80	13.00	0.47
San Francisco-San Diego				
CAR	FSJ -DOCN	18.12	8.08	∞
	FSJ -DCBD	19.68	8.68	∞
CTOL	FSFO-DSAN	24.50	1.29	0.62
	FSJC-DSAN	24.50	1.58	0.92
	FOAK-DSAN	24.50	1.85	1.23
BUS	FCBD-DCBD	17.40	13.00	0.69

(a) Direct flight
(b) Connecting flight

Table A-3. California Service Path Characteristics, 1971 (Cont)

Mode	Service Path	Cost ($)	Time (hr)	Frequency (no. departures/hr)
San Francisco-Sacramento				
CAR	FVAL-SCBD	2.30	1.07	
	FVAL-SDAV	1.60	0.68	
	FDAV-SCBD	0.68	0.30	
	FDAV-SDAV	0.0	0.0	
CTOL	FSFO-SSMF	8.00	0.33	0.43
	FSJC-SSMF	12.00	0.58	0.14
BUS	FCBD-SCBD	3.84	2.20	1.78
	FOAK-SCBD	3.48	1.80	1.78
	FSJ-SCBD	4.33	4.75	0.29
	FWOD-SCBD	0.85	0.42	0.36

Table A-4. Midwest Triangle Service Path Characteristics

Mode	Service Path	Cost ($)	Time (hr)	Frequency departures/hr)
Chicago-Detroit				
CAR	CCHI-DCHL	9.56	3.77	∞
CTOL	COHARE-DMETRO	27.00	0.92	1.17
	CMDWAY-DMETRO	27.00	0.92	0.57
	CMIEGS-DCITY	30.00	1.25	0.29
BUS	CCBD-DCBD	12.70	5.55	0.64
RAIL	CCBD-DCBD	16.25	5.50	0.14
Chicago-Cleveland				
CAR	CCHI-VAMH	17.00	4.07	∞
	CCHI-VLOR	11.67	6.17	∞
CTOL	COHARE-VHOPKN	33.00	1.11	0.89
	CMDWAY-VHOPKN	33.00	1.00	0.29
BUS	CCBD-VCBD	15.55	7.5	0.79
RAIL	CCBD-VCBD	19.75	6.6	0.07
Detroit-Cleveland				
CAR	DROC-VAMH	5.48	1.76	∞
	DTOL-VAMH	4.20	1.27	∞
CTOL	DMETRO-VHOPKN	18.00	0.58	0.82
	DCITY-VBURKE	22.00	0.67	1.00
BUS	DCBD-VCBD	8.25	3.15	0.715

APPENDIX B

AEROSPACE TRANSPORTATION SYSTEM SIMULATION COMPUTER PROGRAM

CONTENTS

FIGURES

APPENDIX B

AEROSPACE TRANSPORTATION SYSTEM SIMULATION COMPUTER PROGRAM

B.1 OVERVIEW

The Aerospace Transportation System Simulation Program consists of four interrelated routines which operate as follows. The Modal Split routine uses mode, arena, and traveler characteristics to produce as a function of fare the percent of travelers using each available transportation mode. In this analysis, a special mode (STOL) is modeled assuming infinite frequency of service. For this special mode, the modal split routine produces outputs defining a distribution of maximum waiting times, which is later used to determine how long potential STOL travelers will be willing to wait for a departure under a finite frequency of service before taking an alternative mode.

The Demand-Matching routine uses the total daily intercity travel demand, STOL schedules, a diurnal distribution of demand, and the STOL modal split and waiting time distributions to produce average load factors for each aircraft capacity and fleet size (associated with a particular schedule).

The Economic-Analysis routine uses these load factors along with fleet sizing requirements to produce an economic analysis (profit, investment costs, return on investment) for each of the fleet sizes and capacities tested.

Finally, an Optimization routine uses various operating criteria to pick the best STOL fleet size and fare for each capacity. Each of these routines is discussed in more detail below.

B.2 THE MODAL SPLIT ROUTINE

a. Overview

Modal split analysis attempts to determine the utilization of a number of alternative travel modes between specified origins and destinations. The method described herein computes the modal split by generating simulated travelers, each having a set of pertinent attributes randomly selected from

appropriate probability distributions. Distributions are used to determine purpose and duration of trip, origin and destination door locations and time of day, the traveler's "time value" (a function of his income) and party size, his "preference factor" for each alternative travel mode, and his waiting times (which are functions of service frequency) for each mode. (These quantities are explained fully below.) The attributes of individual simulated travelers are generated by drawing random samples from these distributions.

Once an individual traveler's attributes have been generated, his "effective cost function" for each travel mode is computed. This effective cost function reflects out-of-pocket cost, trip time, travel mode service frequency, and traveler preferences. When the effective cost functions for the alternative modes have been computed, the traveler is assigned to the mode with the minimum effective cost function.

One mode (designated as the special mode, or STOL in this particular analysis) is treated differently with respect to frequency of service. For this mode, it is assumed that there is infinite frequency of service or, in effect, no waiting. Instead, when a traveler is assigned to STOL, a computation is made to determine how long he will wait before taking an alternate mode. This information will be used later in the demand-matching routine which uses specific STOL schedules.

The modal split and a distribution of tolerable STOL waiting times is thus determined by generating many simulated travelers and assigning each traveler to his minimum-cost-function mode.

b. Arena Characterization

Figure B-1 depicts the arena or abstraction of the real world in which the modal split simulation takes place. Two regions are each divided into a number of rectangular zones of various size. Each travel mode has one or more ports in each city, some of which may be collocated (as, for example, the combined CTOL/STOL port in the figure). Car mode is also considered to have "ports" which normally represent points of access to the highway system between the two regions. Transportation service may be provided

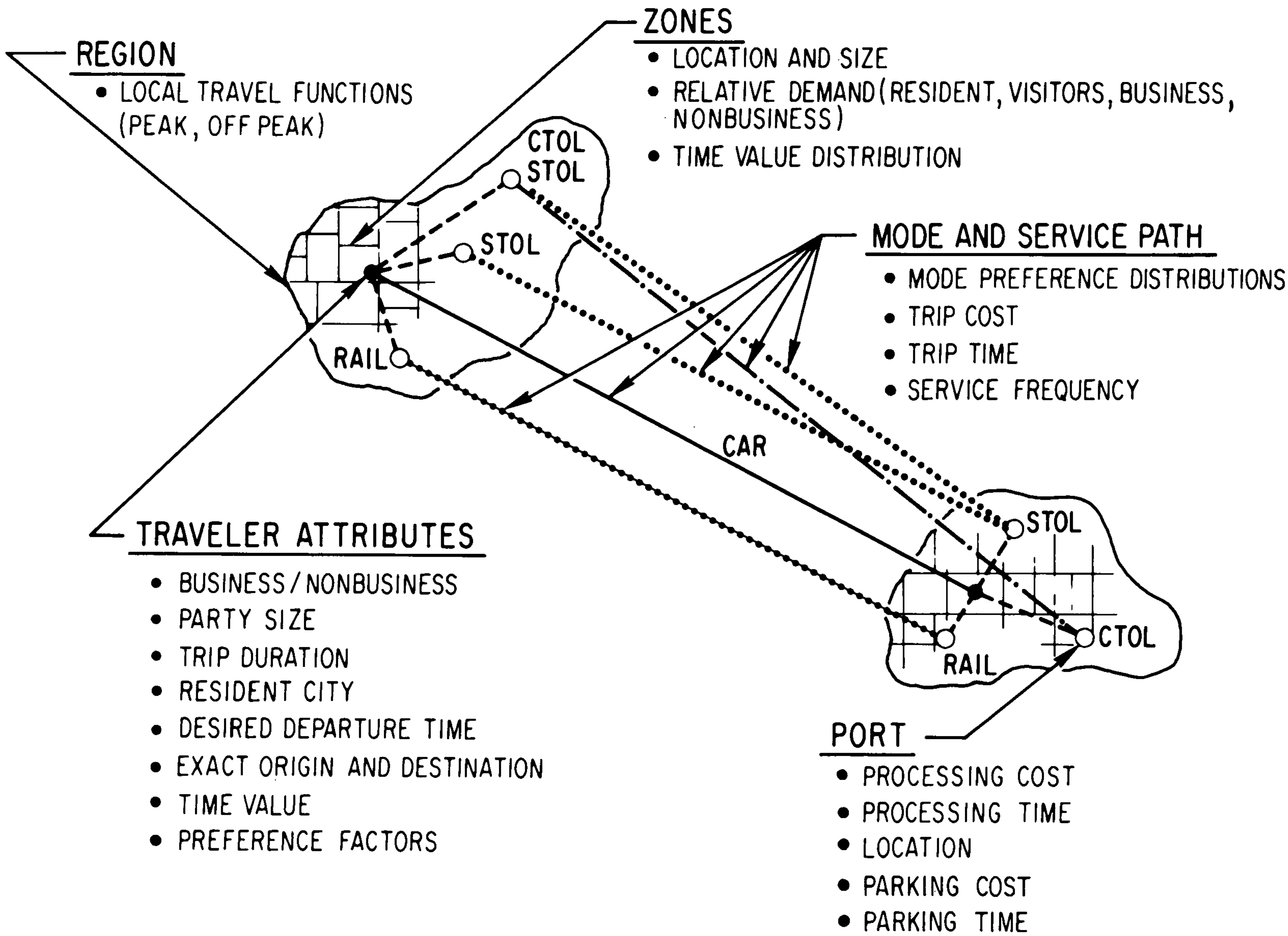


Figure B-1. Typical Modal Split Simulation Model Arena

between some or all intercity port-pairs. Each port-pair of each mode for which service is provided is called a service path. Service, when provided, is characterized by its cost, trip time, and frequency (car mode is always considered to have infinite service frequency).

c. Inputs

(1) Arena Inputs

Inputs associated with the entire simulation arena consist of: (i) the number of simulated travelers to be generated in order to get a statistically accurate modal split; (ii) the fraction of those travelers that are business travelers; (iii) the relative number of travelers that live in each city; (iv) the party size and trip duration distributions for both business and nonbusiness travelers; (v) the fraction of travelers affected by frequency of service; and (vi) a factor which expresses the conversion of waiting time to perceived time. The specified service frequencies of the various modes (expressed as the number of departures per hour) is used to compute the time intervals between flights or services. For those travelers who are affected by service frequency, random samples are drawn from these time intervals during simulation and are used to compute waiting times for the various modes. These waiting times are then converted to their equivalent perceived times. Waiting time may be perceived to be worse than traveling time if the waiting is done at a port or station. On the other hand, if waiting is done at home or at the office, this may be time effectively spent and the delay would not consist of totally wasted time.

The distinction between business and nonbusiness travelers is important because many of the attributes directly affecting mode choice are dependent upon whether or not the traveler is on a business trip (for example, the traveler's time value, trip duration, and party size). Party size is important because the direct costs associated with the car mode can be considered to be divided by party size, while those of other modes cannot. Trip duration is important because certain costs (for example, the parking cost at a port) are dependent upon the duration of the trip. The trip duration distributions were found to be inherently lognormal and so are represented by two parameters

related to the median and standard deviations of a lognormal distribution. The fraction of travelers of a given type (business or nonbusiness) affected by frequency of service represents those who have strong schedule preferences; much of the time spent by them waiting at either end of a flight or trip is wasted. Conversely, the fraction not affected by service frequency represents those flexible travelers who would not be appreciably inconvenienced even if a mode had only a few departures during the simulation interval.

Note that with the exception of the waiting time conversion factor and the number of travelers to be simulated, all of the input quantities discussed in this section represent distributions; as such, they are not utilized directly in subsequent computations. Rather, random samples drawn from these distributions are used to establish the attributes of individual simulated travelers.

(2) Region Inputs

Inputs associated with each region consist of the fraction of trips arriving or departing during the peak traffic period of the day along with the cost and time of local transportation (as functions of distance) for the peak and off-peak periods. Cost versus distance and time versus distance tables are provided for both private car and composite local transportation modes. These tables permit the cost and time associated with the door-to-port (origin region) and port-to-door (destination region) portions of trips to be computed based on the distance to be traveled. The tables enable each simulated traveler to make a tradeoff between driving his car and parking at the port (for his trip duration) versus taking the composite local transportation mode (which may be a weighted average of taxi, local bus, airport limousine, etc.). The tables permit realistic nonlinearities in these functions, such as the fact that for short distances local travel is accomplished at a lower average speed than for longer distances. Travelers who use car for their port-to-port mode must use the car tables for local travel in each region.

Travelers using noncar modes must use local transportation in the destination region but may choose the most cost effective door-to-port mode in the origin region.

Tables of parking cost and transportation rental cost versus trip duration for the destination region are also provided. These tables permit different costs to be incurred in the destination region, depending upon whether a traveler drives there (in which case he would incur the parking cost) or takes a public transportation mode (in which case he would incur the transportation rental cost). Either or both of these costs may be made zero for all values of trip duration if appropriate for a specific application.

(3) Zone Inputs

The inputs associated with each rectangular zone of a city are: (i) the coordinates of the corners of the zone (relative to an arbitrary origin); (ii) the relative resident business travel demand (the number of resident business travelers emanating from that zone relative to other zones); (iii) the relative visiting business travel demand (the number of nonresident business travelers arriving in that zone relative to other zones); (iv) the relative resident nonbusiness demand; (v) the relative visiting nonbusiness demand; and (vi) the lognormal time-value distributions for business and nonbusiness travelers.

Time value is the hourly rate the traveler associates with the time spent on his trip and is generally considered to vary depending upon whether he is traveling for business or for nonbusiness purposes. Time value is used to convert total trip time to equivalent dollar cost. The provision for separate time-value distributions for each zone permits a realistic representation of the variations in affluence throughout the region.

(4) Mode Inputs

Each travel mode has an associated lognormal preference-factor distribution. The preference factors for the various modes are intended to represent all of the noneconomic factors affecting mode choice, that is, all of the

factors which cannot be expressed in units of cost and/or time. Since they represent the intangibles, the preference factors are the calibration parameters of the simulation model. They are the quantities that are adjusted to achieve consistency between model predictions and actual mode-use surveys in arenas for which survey data exists. In the simulation, the intercity portion of a traveler's cost function for each mode is divided by his preference factor for that mode (as drawn from the appropriate distribution). Thus a preference factor less than 1 for a given mode indicates that the traveler views that mode with disfavor, whereas a factor greater than 1 indicates a preference for the mode. Preference factors, therefore, represent the degree to which a traveler will go against pure economics in choosing a travel mode.

(5) Port Inputs

Each travel mode may have one or more ports in each region. Ports are uniquely associated with specific modes. For example, a combined CTOL/STOL port is simulated by locating a CTOL port and a STOL port at the same point. Each port is characterized by its location, processing cost, processing time, parking time, and a table of parking cost versus trip duration (the length of time in days that the traveler will be away from his resident city). The port processing cost is simply any cost incidental to the use of that port, such as a baggage handling charge. The processing time is the time spent from arrival at the entrance to the port until the intercity portion of the trip begins. This time might typically include baggage checking, intraport movement, and ticketing but does not include waiting which is treated separately. The parking time is the additional time required to park a car and walk from the parking lot to the port entrance. This time is added if the traveler elects to drive his car to the port and park it for the trip duration. The parking cost table is used to establish the cost he incurs.

(6) Service Path Inputs

The inputs associated with each service path are those required to describe the service provided between that pair of ports: out-of-pocket cost,

trip time, and service frequency. For public transportation modes, the out-of-pocket cost is the fare, the trip time is the scheduled time (which may include an increment for predictable or usual delay), and the service frequency is the number of trips made per hour. For car mode, cost and time are the values that apply to that service path, and service frequency is not input since it is automatically considered to be infinite (a traveler's own car, if available, is not constrained by a finite "service frequency"). Similarly, the special mode (STOL) is considered to have infinite frequency since explicit schedules for this mode will be modeled later in the Demand-Matching routine.

d. Generation of Traveler Attributes

The attributes of each simulated traveler are generated by random draws from the input-probability distributions described in the preceding sections c.1 through c.6. Correlations between attributes are explicitly represented in that the determination of a given attribute may define the distributions from which other attributes are drawn.

The sequence used to generate a complete set of attributes for a simulated traveler is as follows: First, a draw is made based on the number of travelers who live in each region to determine the traveler's resident region. This is the region in which his trip is assumed to originate. Then the departure and arrival time periods (peak or not peak) are drawn, based upon the appropriate fractions for each region. Next, a draw is made based on the specified fraction of travelers that are business travelers to determine the traveler's trip purpose. Based on the outcome, draws are made from the appropriate distributions to determine the traveler's origin region zone, trip duration, party size, preference factors for each of the alternative modes, and destination region zone. From distributions associated with the traveler's origin zone, his time value and origin door coordinates are drawn (door coordinates are drawn uniformly from within the zone). A determination of whether or not the traveler is affected by service frequency is made by drawing from the appropriate two-valued distribution representing the fraction of business or nonbusiness travelers affected. If he is found to be affected, his waiting times for all the

alternative service paths are computed by drawing from uniform distributions over the intervals between trips. For example, if the interval between trips on a particular service path is 30 min, the waiting time for that path will be determined by drawing from a uniform distribution of 0 to 30 min. Finally, the traveler's destination door coordinates are drawn from a uniform distribution over the destination zone.

e. Cost Function Computations

Once the attributes of a simulated traveler have been generated, his cost function for every service path is computed. The cost function for a given service path consists of three components - the door-to-origin-port portion of the trip, the port-to-port portion, and the destination-port-to-door portion. For each component, the pertinent costs and times are summed separately, and the total time is converted to equivalent cost by multiplying it by the traveler's time value. The port-to-port portion of the cost function (cost plus time multiplied by time value) is divided by the traveler's preference factor for the mode under consideration. All costs associated with the use of a private car (either for the entire trip, or to drive to a port and park) are divided by the traveler's party size. For public intercity modes, a tradeoff is made between driving to the origin port and parking for the trip duration versus taking the composite local transportation mode to the port; the traveler is presumed to follow the course of action which results in the minimum cost function. Local travel (door-to-port and port-to-door) is presumed to take place along orthogonal north-south and east-west lines (or any other designated orthogonal compass directions for that matter), and local travel distances are computed accordingly. Costs and times are determined from these distances using the input tables for the appropriate time periods of travel. The assumption that local travel takes place along orthogonal lines represents a first-order model of a city street network, while avoiding the necessity of representing such a network explicitly.

f. Mode Choice

Each simulated traveler is assigned to that mode and service path which has the smallest effective cost function. If this mode is the special mode (STOL), an additional computation must be made to determine the traveler's maximum tolerable waiting time for this mode. A traveler's willingness to wait for a STOL flight is measured by the difference between the STOL effective cost function and the effective cost function of the next best non-STOL mode. This difference, expressed in dollars, is converted into waiting time using the traveler's sampled time value and STOL preference factor. If the traveler had to wait more than this length of time for a STOL flight, it is assumed that he would rather take the next best mode (which already has its waiting time taken into account in its cost function).

g. Outputs

The outputs of the modal split simulation program consist of optional output during simulation, and a standard set of outputs at the conclusion of a simulation. During simulation, "traveler's records" may be printed for every nth traveler (where n is specified). A traveler's record consists of all of the known facts about a given traveler - all of his attributes, his assignment to a particular mode and service path, and the cost function components (all the costs and times) associated with that assignment. Traveler's records are useful for verifying that a simulation case is specified correctly and for gaining insight into why travelers are making certain mode choices.

At the conclusion of a simulation, the number or fraction of travelers assigned to each service path of each travel mode is provided, along with totals by city ports and travel modes. In addition, for the special mode two waiting-time distributions are provided for each service path (one for each of the two time periods) along with the relative amount of travel on this mode during the two time periods. This special mode output is used as an input to the demand-matching routine.

B.3 DEMAND-MATCHING ROUTINE

In addition to the STOL fractional modal split and waiting time distributions for each STOL fare, the Demand Matching routine uses the intercity total daily travel demand, a diurnal distribution of desired departure times and a set of candidate schedules (with associated fleet sizes and capacities).

This routine determines the average load factor (and actual number of passengers carried) for each schedule and capacity, using a Monte Carlo simulation. In this process each potential STOL traveler is assigned an explicit desired departure time and maximum waiting time. A traveler's desired departure time is sampled from a diurnal probability distribution representative of short haul air travel. His maximum waiting time is sampled from one of the waiting time distributions produced by the modal split routine. The actual distribution used depends on the traveler's desired departure time and service path. If the total time between a traveler's desired departure time and the time of the next unfilled flight is less than his maximum waiting time, he is assigned to that flight. If his waiting time is not large enough or if there are no remaining available flights during the day, the traveler is considered lost to another mode. Flights during the evening peak hours will fill up more often than others due to the high demand during this period. However, most schedules will have additional flights in the early evening which will not typically fill up. Therefore, most travelers will be lost due to their unwillingness to wait for the next available flight rather than the lack of unfilled flights.

An additional feature of this routine allows a flight to be cancelled if the load factor is below a specified minimum. In this case some of the travelers already assigned to that flight will be lost while others will take the next available flight, depending upon their maximum waiting time. This feature can be helpful in determining optimal schedules.

It is very cost effective to separate the Demand-Matching from the Modal Split routines. Many schedules and capacities can be tested for a minimal computer cost as opposed to rerunning the whole modal split routine for each new STOL schedule. The disadvantage is that it is not possible to tell to which modes the lost STOL travelers go. However, this can be determined after the

fact for any schedule of interest by rerunning the Modal Split routine with finite STOL frequency of service (corresponding to the frequency of the given schedule).

B.4 ECONOMIC ANALYSIS

Complete details of the economic analysis model are contained in Appendix C. Only the inputs and outputs will be discussed here.

Fixed input to the economic analysis routine consists of over fifty descriptive parameters to describe characteristics of the aircraft being considered, as well as other economic assumptions. In addition, for each service path the following are specified: stage length, a set of candidate fleet sizes to be tested (along with the associated schedules, number of departures, and capacities), and the actual number of passengers carried for each fleet size, capacity, and fare.

After the anlysis, this routine provides for each capacity, fare and fleet size, the after-tax daily revenues, daily operating costs, aircraft investment costs, return on investment, and any profits in excess of (or below) a specified fair return on investment.

B.5 OPTIMIZATION PROCEDURES

The purpose of this routine is to specify for each capacity, the best operating fare and fleet size. It is a multilevel optimization routine which exercises a hierarchy of restrictions.

Basic inputs to this routine consist of a maximum average load factor and a specification of what constitutes a fair return on investment. Given a set of operating conditions (for example, a number of fleet sizes for a given fare and capacity, or a number of fares for a given capacity), the routine selects the best condition in the manner noted below.

First the restriction of operating with less than the maximum permissible average load factor is exercised.* Any operating condition not satisfying this restraint is eliminated. This restriction is needed to reflect weekly and yearly variations in demand, as well as realistic operating conditions. Airlines

*This constraint is applied independently to each service path.

may operate with very high load factor during peak seasons but over the course of the year a lower load factor will prevail. Similarly an airline which operates with insufficient capacity will antagonize passengers and invite additional competition.

The next restriction is that of making at least a fair return on investment. While it is always possible to operate below the maximum average load factor (by increasing fleet size or increasing fare), it is not always possible to obtain a fair return on investment. If none of the remaining operating conditions satisfies this requirement, then the operating condition which most closely approximates a fair return on investment is selected as the best operating condition.

Finally, if more than one operating condition shows at least a fair return on investment, that operating condition which maximizes the number of passengers carried is chosen.

This total procedure is first used on each service path to find the best fleet size for a given fare and capacity. Then, if there is more than one STOL service path for a given city pair, the STOL results are aggregated over all service paths as a function of fare and capacity. This procedure assumes that only one STOL fare and capacity will be used for a given city-pair on all service paths. The optimization routine at this point then determines the best fare for each capacity for the total STOL system between the given regions.

B.6 OUTPUTS

The final output of the Transportation System Simulation Program consists of a table for each aircraft concept. This table designates as a function of capacity, the optimum operating fare and fleet size (with an associated schedule), plus the results of operating under these conditions (e.g., average load factors, return on investment, total investment). In addition, there are many intermediate results which include modal splits of non-STOL modes, as well as a complete analysis of all non-optimum operating conditions.

APPENDIX C

ECONOMICS

APPENDIX C

CONTENTS

FIGURES

TABLES

APPENDIX C
ECONOMICS

C.1 FLYAWAY COSTS

The basic methodology used in the flyaway cost analysis emphasized relating known aircraft characteristics and costs to the new STOL aircraft concepts rather than using costs derived from prior studies and analyses, since these latter costs were not consistent with vehicle sizes or configurations.

An initial analysis was conducted comparing the size and performance of existing aircraft to each of the new STOL concepts to indicate the significant performance parameter differences that will affect the STOL aircraft flyaway costs. This comparison, shown in Table C-1 compares both an existing turboprop and turbofan with the STOL turbofan and turboprop aircraft.

The most significant size and performance variations between the existing CTOL aircraft and the STOL concepts were in design range and engine characteristics. The impact of design range on weight can be seen by comparing the 115-passenger DC 9-30 which has a gross take-off weight of 108,000 pounds and a design range of 1,700 miles with the 120-passenger Externally Blown Flap (EBF) aircraft which has a gross takeoff weight of 93,011 pounds and a design range of 500 mi. Were the EBF to be designed for a longer range, it would increase in both weight and cost.

With respect to engine concepts, the turboprop designs were based on lightweight/low SFC characteristics that are not found in present technology engines, while the turbofan concepts appeared to be within present technology.

a. Research and Development Costs

Research and development costs were estimated by airframe and engine types. Airframe development costs were developed from available industry estimates and prior V/STOL studies and are illustrated in Figure C-1. Industry estimates of commercial development costs are generally not published and, therefore, represent a large uncertainty. While the early jet transports owed much of their technology and aircraft systems, particularly engines, to

Table C-1. Aircraft Size and Performance Comparisons, CTOL Versus STOL Concepts

Size and Performance	Turboprop			Turbofan				
	CTOL	STOL		CTOL	STOL			
	YS-11	Deflected Slipstream		DC9-30	Externally Blown Flap		Augmentor Wing	
No. of Pass. (max)	60	60	120	115	60	120	60	60
TOGW (lb)	54,010	52,758	86,100	108,000	62,824	93,011	61,806	62,278
Weight Empty (lb)	32,437	32,908	49,719	55,129	40,924	54,983	40,181	40,528
Airframe Weight (lb)	29,705	31,448	47,183	48,737	33,651	45,589	34,186	33,691
Engine Weight (ea)	1,360	365	634	3,196	1,818	2,349	2,998	1,709
Thrust/lb Engine Weight	2.02	9.34	8.28	4.54	5.17	5.83	5.34	4.19
Design Cruise (mph)	291	425	425	565	544	544	544	544
No. of Engines	2	4	4	2	4	4	2	4
Max. Thrust or Shp. (ea)	2,750	3,410	5,250	14,500	9,400	13,700	16,000	7,160
Block Fuel - 400 mi	3,694	3,814	6,711	6,120	4,156	6,162	4,841	4,300

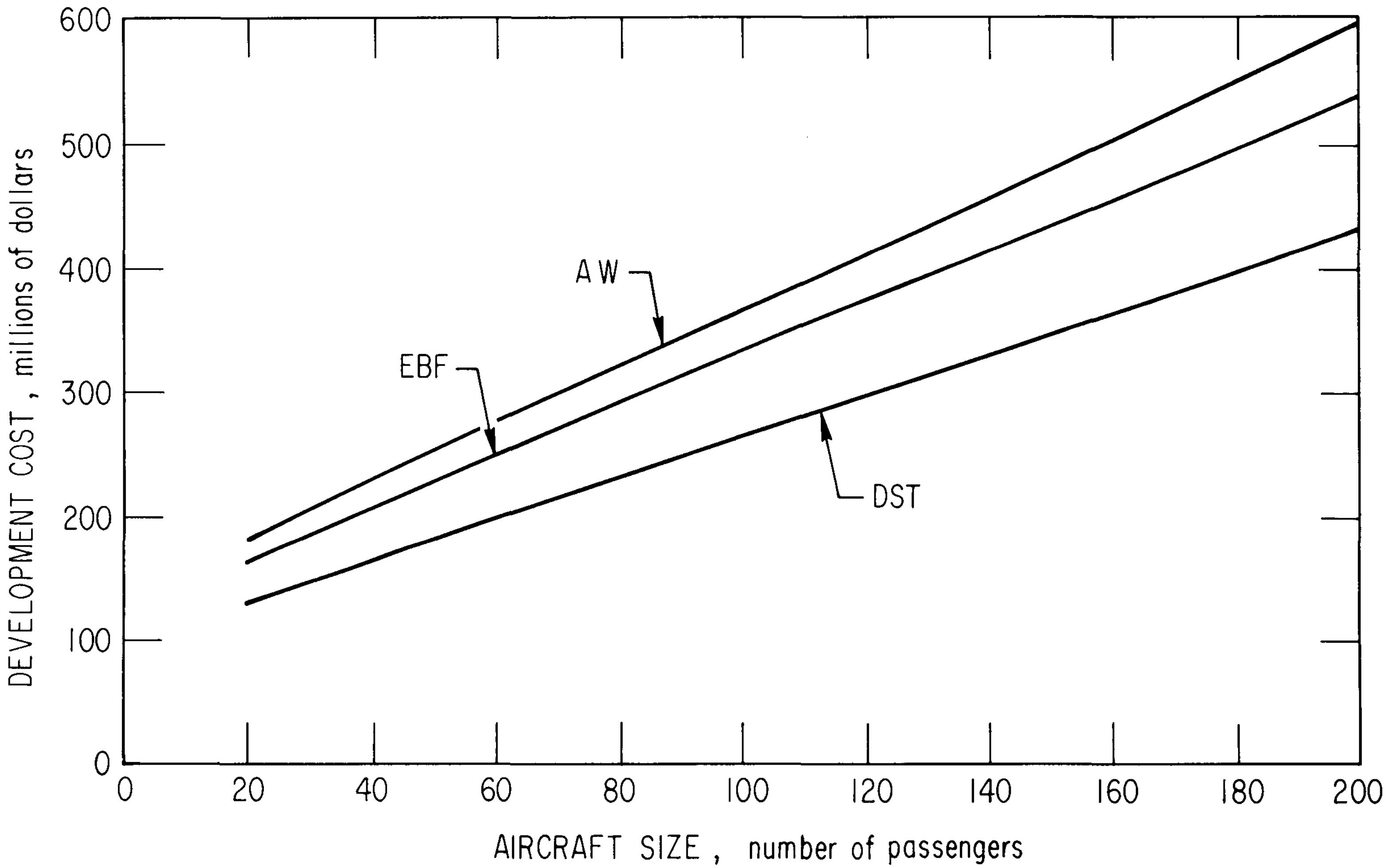


Figure C-1. Airframe Development Costs

prior military development, it is likely that future STOL aircraft will not have the benefit of such prior development. Commercial versions of military aircraft have also generally been uneconomical, as aircraft primarily developed to fulfill military requirements tend to be heavy and complex. The S-61, C-130, C-141, and C-5 are examples of military aircraft that were, with limited exceptions, not attractive to commercial airlines.

Turboprop engine development costs, shown in Figure C-2, were estimated using a 1965 Rand formula (Ref. C-1) which was escalated to 1971 dollars.

Turbojet/turbofan engine development costs, shown in Figure C-3 are largely dependent upon the amount of advanced technology incorporated into a new engine design. The present technology formula (Ref. C-2) is representative of present technology. Available cost data also indicates that the present technology formula provides costs consistent with recent development programs. For example, the 14,000 lb thrust Pratt & Whitney JT8D was reported (Ref. C-3) to have cost more than $100 million.

Since the engine thrust/weight relationships developed in the initial analysis were within today's engine technology, it was assumed that the cores of existing engines could be adapted to meet the required STOL engine performance requirements. The derivative engine cost curve shown in Figure C-3 was used in the engine cost analysis. It is recognized that uncertainty exists as to whether a basic engine will be available in all thrust ranges and that, depending upon specific engine characteristics, additional or new development may be required.

b. Unit Cost

Unit costs were estimated per airframe and engine based upon the production of 600 aircraft. This estimate was predicated on sales of existing jet powered aircraft and the typical breakeven quantity needed by a major manufacturer.

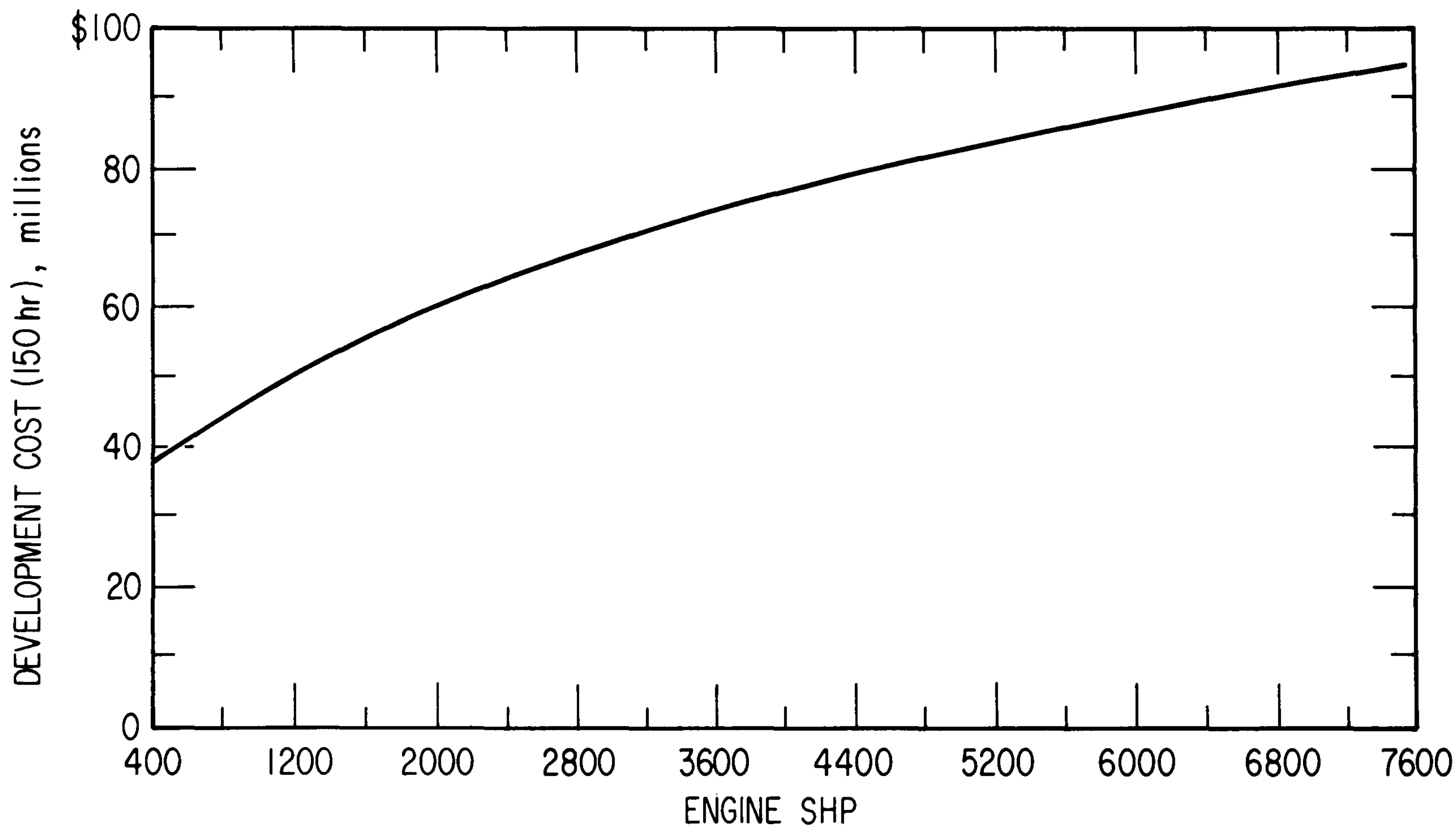


Figure C-2. Turboprop Engine Development Costs

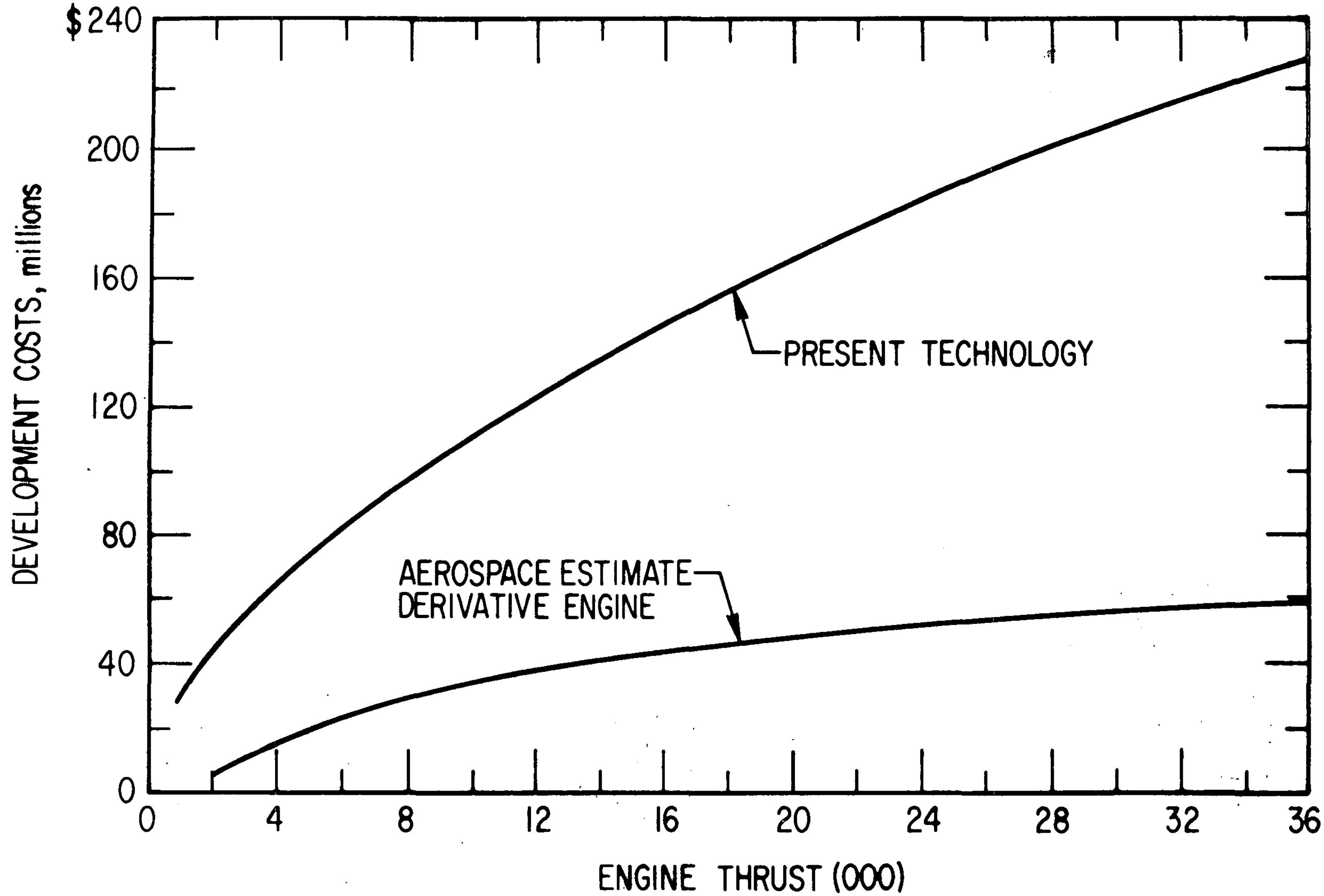


Figure C-3. Turbojet/Turbofan Engine Development Costs (through model qualification test - 150 hours)

For a comparison of existing aircraft sales, a cumulative list of jet aircraft ordered through 1970 (Ref. C-4), shown in Table C-2, indicates that the following number of aircraft have been sold:

1380	707/DC-8
837	727
884	737/DC-9

A worldwide forecast for STOL aircraft with respect to type, size, and design range cannot as yet be predicted with any degree of confidence. For example, origin and destination data indicate that major U. S. markets for short-haul STOL aircraft lie within the 200-400 mi range while the European market appears concentrated in the 100-300 mi range. However, several U.S. airlines would like an 800 mi range so that service could be provided to the New York - Chicago market.

Turboprop engine unit costs, shown in Figure C-4 were derived from a 1965 Rand formula (Ref. C-5) which was escalated to 1971 dollars. The cost curve can be seen to reasonably correlate with the cost of existing engines. It was assumed the material, labor, and tooling costs for producing the lightweight, low SFC engine would raise the unit costs to the level represented by the band.

Turbojet/turbofan engine unit costs are shown in Figure C-5 and are based on 1970 Rand engine formulas (Ref. C-6). Costs of present engines can be seen to reasonably correlate with the projected cost trend. Based upon engine characteristics developed in the initial analysis, turbofan unit costs were projected using the present engine technology cost curve. However, using the engine characteristics developed in the revised analysis turbofan unit costs based on advanced technology engines should have been used.

Table C-2. Airline Purchases Jet Aircraft, Cumulative Orders of 1970

Boeing 707/720 Series	No.	Total	Douglas DC-8 Series	No.	Total
707			DC-8		
-120	20		-10	28	
-120B	121		-20	34	
-220	5		-30	57	
-320	69		-40	32	
-320B	167		-50	89	
-320C	272		-60	177	
-420	37			417	
Total 707	691		DC-8F		
720	144		-54	54	
Total 707/720 Series		835	-61	10	
Boeing 727 Series		837	-62	13	
Boeing 737 Series			-63	51	
737-100	29			128	
737-200	241		Total DC-8 Series		545
Total 737 Series		270	Douglas DC-9 Series		
			DC-9		
			-10	136	
			-20	10	
			-30	409	
			-40	24	
			-Misc	35	
			Total DC-9 Series		614

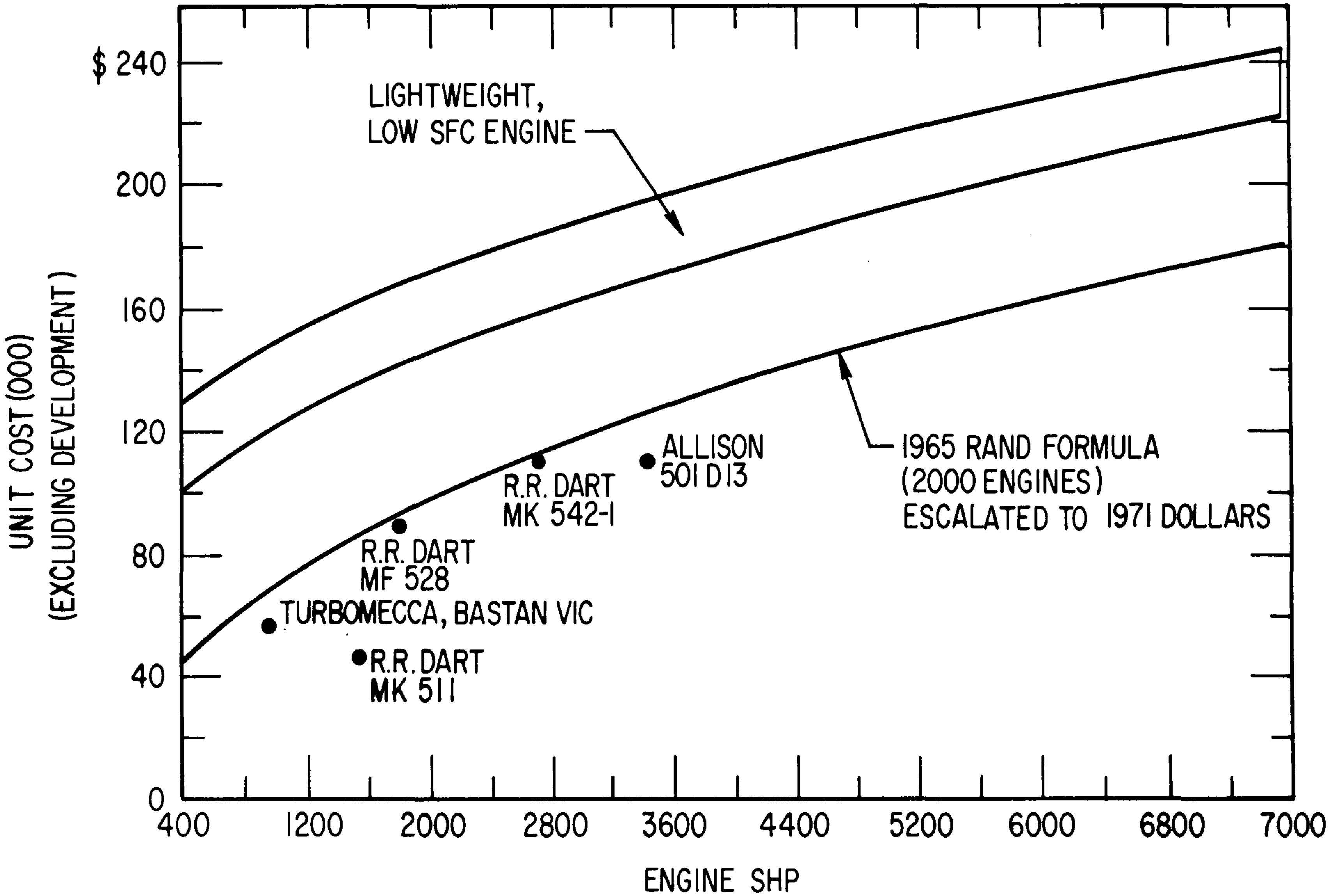


Figure C-4. Turboprop Engine Unit Costs

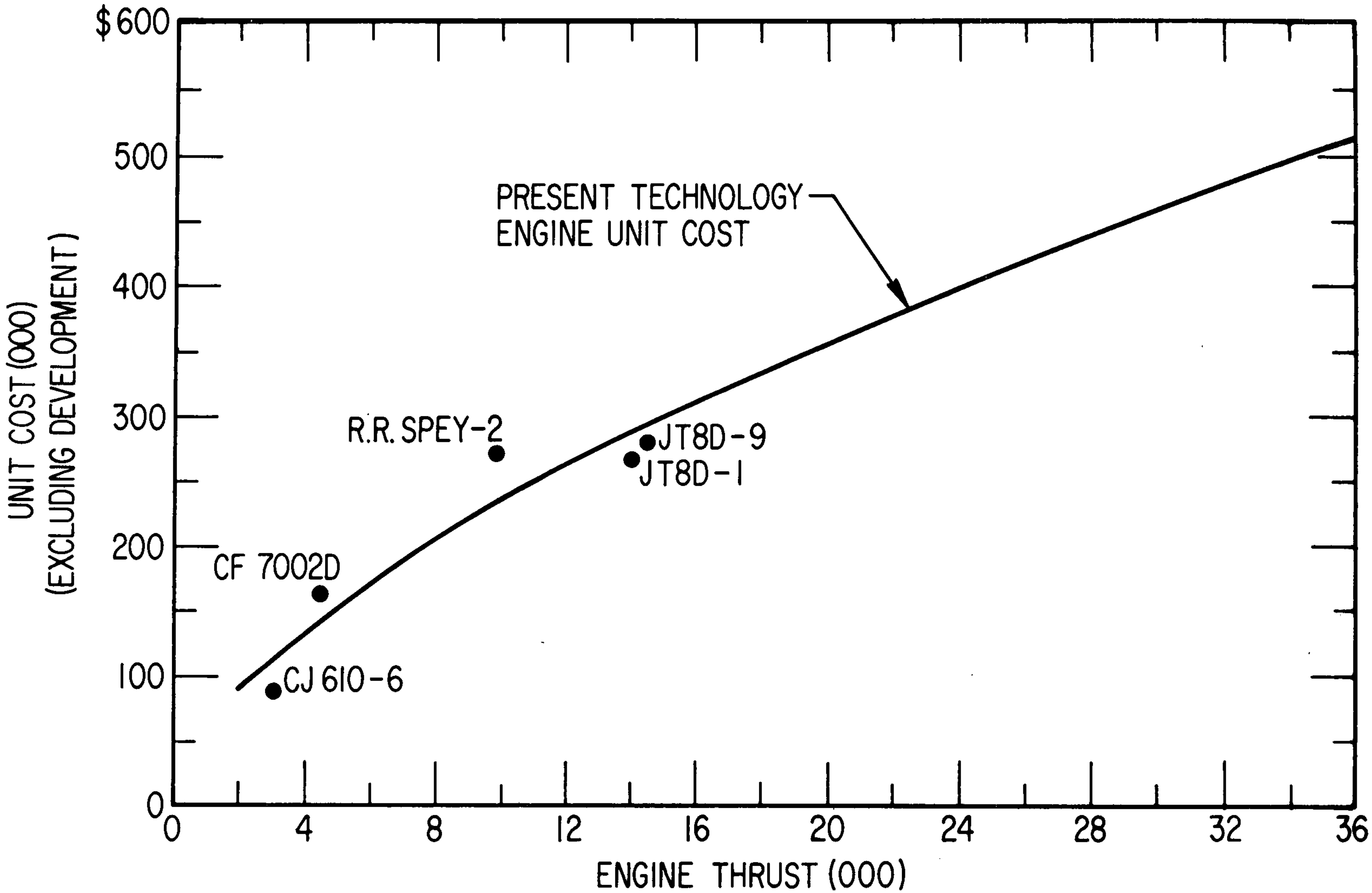


Figure C-5. Turbojet/Turbofan Engine Unit Costs

c. Flyaway Cost

Aircraft flyaway costs are shown in Table C-3 by airframe and engine cost for each of the STOL concepts in the range of aircraft capacities studied. These costs are based on research and development costs, amortized over 600 aircraft and the cost estimating relationships previously developed for the airframe and engine based on the initial weight analysis. Flyaway costs represent the sales price to an airline for an equipped aircraft including avionics but excluding support items such as spares.

A flyaway cost comparison of existing CTOL versus STOL concepts is shown in Table C-4. The flyaway cost shown for the YS-11 and DC 9-30 were obtained from a CAB unit cost report (Ref. C-7). These costs were also used as a guide for estimating airframe unit costs based on the development costs assumed. To develop an airframe unit cost/lb estimating relationship, a $300 million DC-9 airframe development cost and a 500 production amortization basis was assumed, resulting in a basic airframe cost-estimating relationship of $57 per pound. Based on complexity and weight factors, cost estimating relationships were extrapolated for each of the STOL aircraft concepts. Existing engine costs for the YS-11 and DC-9 were also adjusted to reflect a small development amortization cost.

A recent review of the inputs used in generating the costs in Table C-5 has indicated that the costs for both turbofan aircraft are too optimistic (low). This was due to a misinterpretation in engine weights, resulting in an underestimation of engine costs, total aircraft weight, and aircraft costs. A check of the effect of this on the study results for the California Corridor indicates that the higher aircraft costs will require an increased fare to achieve the desired ROI, and the total STOL demand would decrease by 15 percent. Current system studies (Task A-1 and E) will reflect the corrected weights and costs.

Table C-3. Aircraft Flyaway Costs, $\times 10^3$

Aircraft Size	Deflected Slipstream			Externally Blown Flap			Augmentor Wing 4-Engine			Augmentor Wing 2-Engine		
	Airframe	Engine	Total	Airframe	Engine	Total	Airframe	Engine	Total	Airframe	Engine	Total
30	$1570	$ 733	$2303									
40	1761	771	2532							$2546	$ 622	$3168
50	1949	806	2755	$2541	$ 888	$3429				2710	662	3372
60	2134	839	2973	2693	937	3630	$2840	$ 792	$3632	2874	702	3576
70	2316	870	3186	2845	986	3831	3004	832	3836			
80	2495	898	3393	2999	1033	4032	3168	871	4039			
90	2670	926	3595	3154	1079	4233	3333	909	4242			
100	2843	949	3792	3309	1125	4434	3498	947	4445			
110	3014	971	3985	3466	1169	4635	3665	984	4649			
120	3181	991	4172	3624	1212	4836	3833	1019	4852			
130	3345	1010	4355	3782	1255	5037	4000	1055	5055			
140	3506	1027	4533	3941	1297	5238	4169	1090	5259			
150	3664	1042	4706	4101	1337	5438	4339	1123	5462			
160	3819	1056	4875	4262	1377	5639	4509	1157	5666			
170	3972	1068	5040	4424	1415	5839	4680	1189	5869			
180	4121	1079	5200	4586	1453	6039	4851	1222	6073			
190	4267	1089	5356	4749	1490	6239	5023	1253	6276			
200	4411	1097	5508	4913	1526	6439	5196	1284	6480			

Table C-4. Flyaway Cost Comparisons, Existing CTOL versus STOL Concepts

	Turboprop			Turbofan				
	YS-11	Deflected Slipstream		DC9-30	Externally Blown Flap		Augmentor Wing 60 Pass.	
Flyaway Cost (Incl Dev) (000)	60	60	120	115	60	120	2 Eng.	4 Eng.
Airframe	$1,614	$2,134	$3,181	$3,378	$2,693	$3,624	$2,874	$2,840
Engine	223	938	991	553	937	1,212	702	792
Total Unit Cost	$1,837	$2,973	$4,172	$3,931	$3,630	$4,576	$3,576	$3,632
Development Cost (Millions)								
Airframe	$ 80	$ 199	$ 301	$ 300	$ 251	$ 376	$ 277	$ 277
Engine	14	71	87	50	29	39	43	24
Total Development Cost	$ 94	$ 270	$ 388	$ 350	$ 280	$ 415	$ 320	$ 301
Production Basis for Amortization	200	600	600	500	600	600	600	600
Unit Cost (Excl Dev) (000)								
Airframe	$1,214	$1,802	$2,679	$2,778	$2,275	$2,996	$2,412	$2,378
Engine (ea)	100	180	212	250	222	287	315	188
Total Unit Cost	$1,414	$2,522	$3,527	$3,278	$3,163	$4,144	$3,042	$3,130
Cost Estimating Relationships								
Airframe Cost/Weight	$ 41	$ 59	$ 57	$ 57	$ 68	$ 66	$ 71	$ 71
Engine Cost/shp or Thrust	36	53	40	17	24	21	20	26
Engine Cost/Weight	74	493	334	78	122	122	105	110

Table C-5. Direct Operating Costs, 4-Engine, 120-Passenger Augmentor Wing Concept

	Stage Length					
Per Aircraft Mile	50	100	200	300	400	500
Flying Operations						
Flight Crew	$ .6906	$ .4730	$ .3584	$ .3149	$ .2893	$ .2708
Fuel and Oil	.5688	4072	.3147	.2736	.2453	.2221
Insurance	.2437	.1393	.0914	.0750	.1665	.0585
	$1.5031	$1.0195	$ .7645	$ .6635	$ .6011	$ .5514
Direct Maintenance						
Labor-Airframe	$ .4922	$ .2603	$ .1438	$ .1044	$ .0842	$ .0718
Material-Engine	.5201	.2729	.1487	.1068	.0854	.0723
Labor-Engine	.3101	.1743	.1055	.0818	.0694	.0614
Material-Engine	.4981	.2767	.1648	.1263	.1063	.0935
Maintenance Burden	1.4440	.7824	.4488	.3352	.2765	.2398
	$3.2645	$1.7666	$1.0166	$ .7545	$ .6218	$ .5388
Depreciation	$ .9920	$ .5669	$ .3720	$ .3052	$ .2705	$ .2381
Cost/Mile	$5.7596	$3.3530	$2.1481	$1.7232	$1.4934	$1.3283
Cost/ASM	4.80¢	2.79¢	1.79¢	1.44¢	1.24¢	1.11¢
Utilization (Hours)	2339	2804	3238	3467	3594	3822

C.2 DIRECT OPERATING COSTS (DOC)

DOC specifically relate to flight equipment and cover costs of flying operations, direct maintenance, and depreciation of aircraft.

The "Standard Method for Estimating Comparative Direct Operating Costs of Turbine-Powered Airplanes" that is published by the Air Transport Association (Ref. C-8) provides a means for assessing and comparing the operating economics of various aircraft in a standard environment. Although the method was last revised in 1967 and is largely based on 707/DC-8 aircraft operated in medium- and long-haul service, it currently is the best industry-wide DOC-estimating technique available.

The 1967 ATA formula was updated by comparing reported 1970 airline costs against ATA formula costs. The comparison yielded the following results:

a. Flight Crew - Comparable but does not reflect recently negotiated cost increases

b. Fuel and Oil - Airline experience higher primarily due to air traffic control delays

c. Insurance - Airline rate lower—approximately 1 percent versus 2 percent, using the ATA method

d. Maintenance - Airline costs substantially lower reflecting improved techniques, procedures, and equipment reliability

e. Depreciation - Standard method applicable. Airlines use varying methods.

Based on this comparison, it was judged that the current ATA formula with minor modifications would be representative of new STOL aircraft in initial service, especially where insurance and maintenance costs are likely to be high.

The following modifications were therefore incorporated into the formula:

a. Flight crew costs were escalated 6 percent per year for 1970 and 1971

b. The maintenance labor rate was increased from $4.00 to $5.00 per hour

c. An equation for estimating the labor cost associated with gearing and shafting was added to turboprop maintenance

d. The depreciation equation was modified to reflect the new CAB depreciation rules for aircraft:

Turboprop	-	12 year service life with 5 percent residual value
Turbofan	-	14 year service life with 2 percent residual value

To determine the weight and performance of aircraft ranging in size from 30 to 200 passengers of the same basic concept, parametric sizing techniques were developed from single point design data that was furnished by NASA Ames. Equations were developed covering airframe and engine weight, engine SHP or thrust, block fuel and block time. Cost equations based on the results of the flyaway cost analysis were also developed covering airframe and engine research and development and unit costs in accordance with the 600-aircraft production base.

Using the ATA method, the DOC per one-way trip was calculated for the Augmentor Wing, Externally Blown Flap, and Deflected Slipstream design concepts as a function of vehicle capacity and distance and are illustrated in Figures C-6 to C-8.

The step increase in cost shown above the 120-passenger capacity points represents the addition of a third flight crew member.

The direct operating costs per aircraft mile by each element of DOC for the 120-passenger Augmentor Wing design concept is shown in Table C-5. The impact of maintenance costs as a function of stage length can be seen, ranging from 131 percent of all other DOC for a 50-mi stage length to 68 percent for a 500 mi stage length.

A comparison of direct operating costs versus aircraft size for various turboprop aircraft and the turboprop aircraft used in the study is illustrated in Figure C-9 for a stage length of 150 miles. This illustration shows that the DOC estimated are reasonably consistent with the MDAC 210 STOL aircraft and, as expected, generally higher than existing CTOL aircraft. Also shown is the considerably higher DOC estimated for the commercial STOL

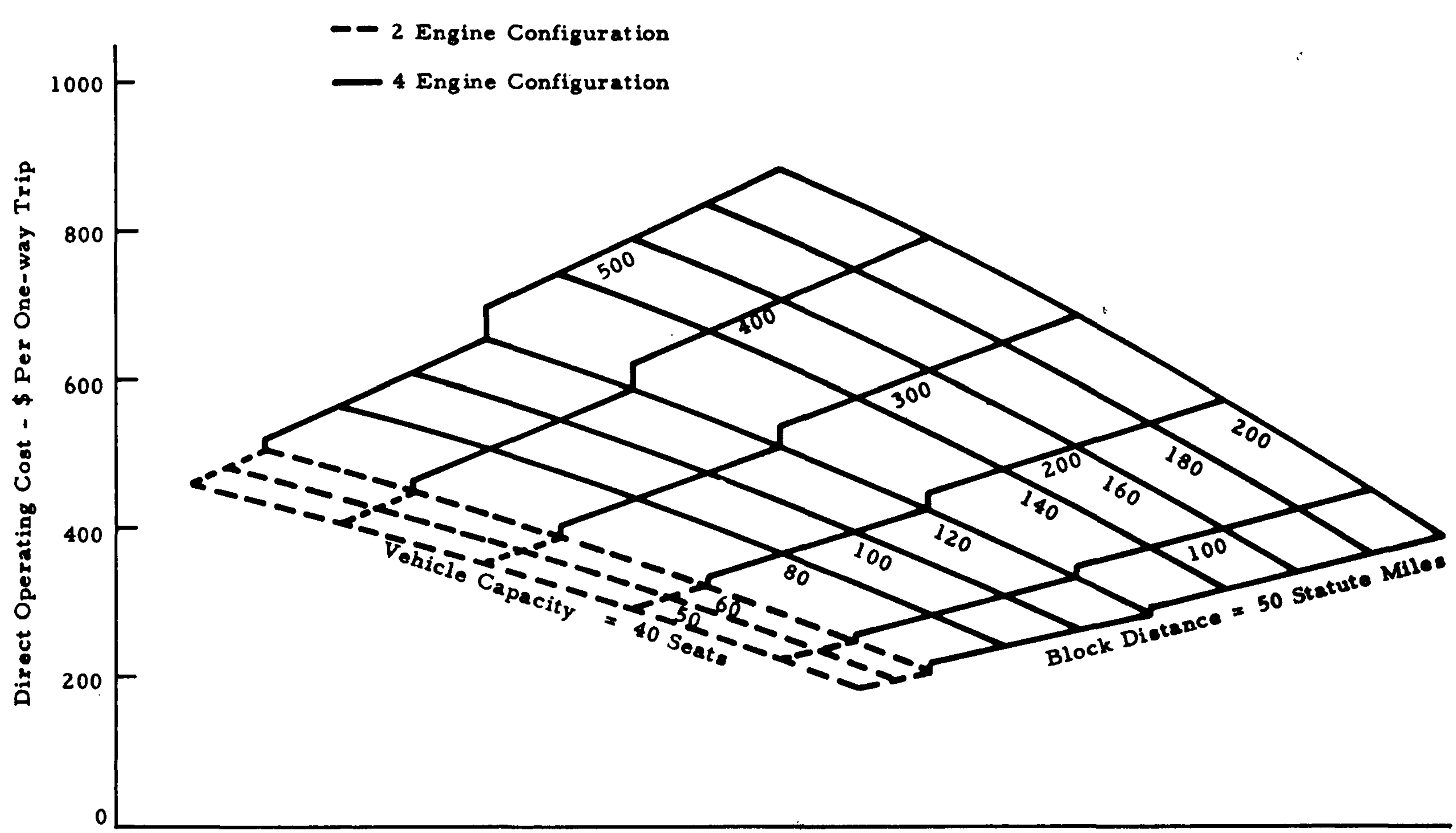


Figure C-6. Direct Operating Costs of Augmentor Wing STOLs

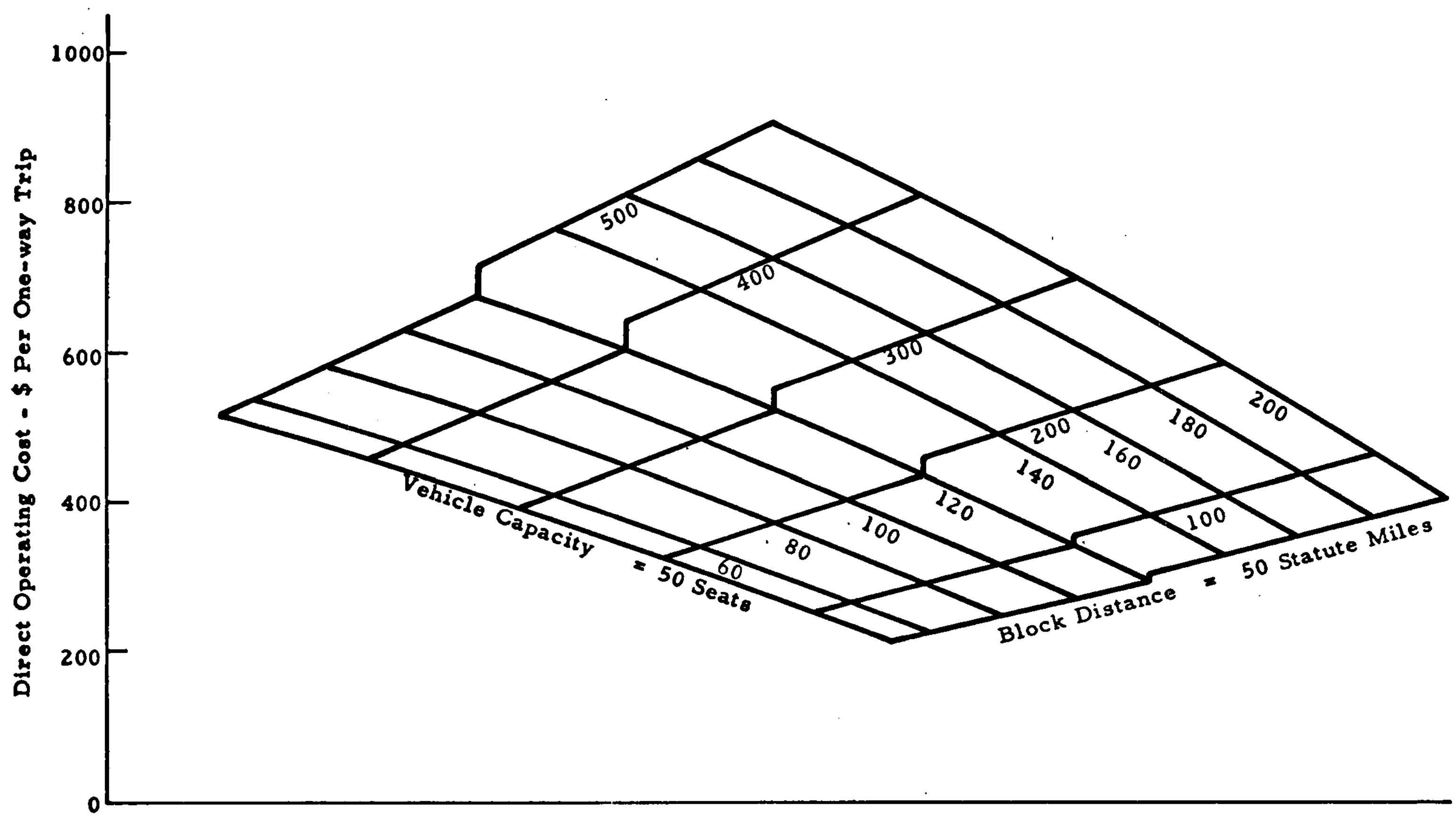


Figure C-7. Direct Operating Costs of Externally Blown Flap STOLs

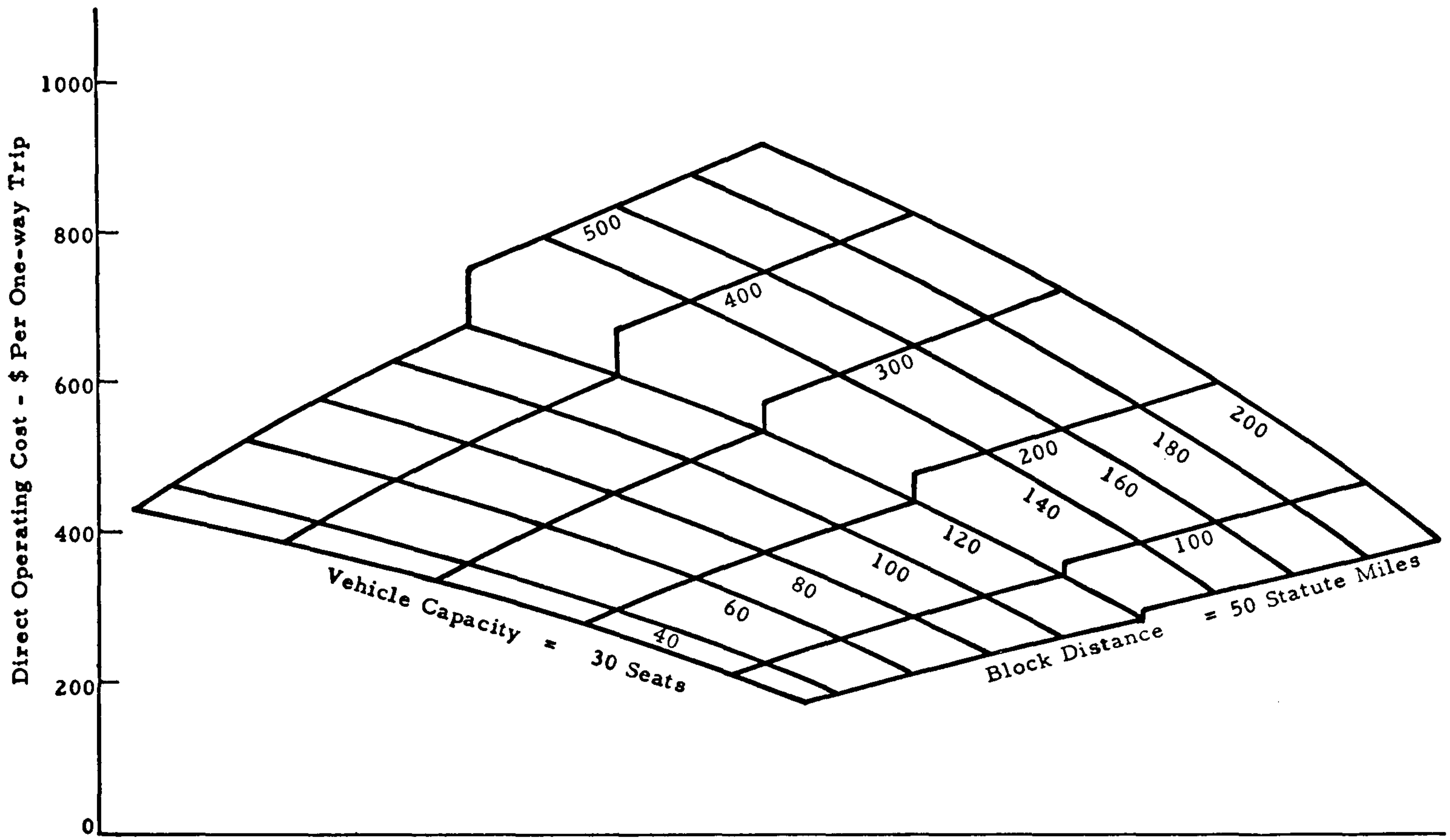


Figure C-8. Direct Operating Costs of Deflected Slipstream STOLs

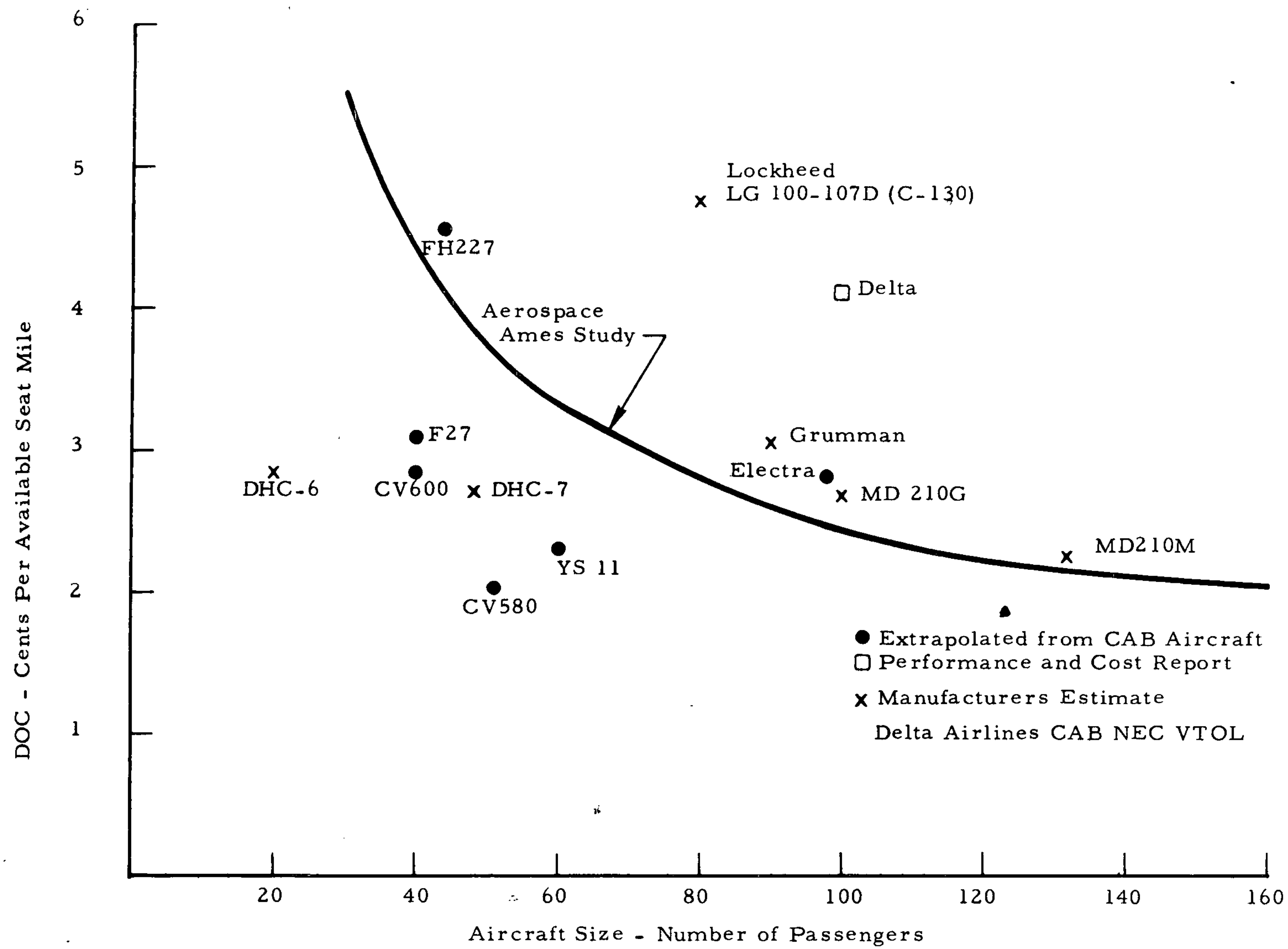


Figure C-9. Direct Operating Cost Comparisons with Various Turboprop Aircraft, Stage Length of 150 Miles

version of the military C-130, which is one of the major reasons why any aircraft designed for military applications is not attractive for commercial airline passenger service.

For any of the STOL aircraft concepts, it should be recognized that until such aircraft are actually in service and DOC are a matter of record over a period of time, the accuracy of the present DOC method (or any method) cannot be verified.

The results of the DOC analysis show why the major airlines generally look for large and fast aircraft, as there are significant economic benefits related to size and speed. Many items comparing DOC do not vary appreciably with changes in size with the result that flyaway and DOC cost per seat decrease with increases in aircraft size. Larger aircraft, however, require more passengers per flight to maintain adequate load factors for economic viability.

3. CALIFORNIA CORRIDOR IOC MODEL FORMULATION

a. Methodology

Analysis was made of each element of each PSA IOC component to determine its percent of total IOC and its sensitivity to the operational cost descriptors. Each element of each IOC component was then allocated in percent to one or more of the operational cost descriptors as indicated in the following section. New percents of total IOC for each element within each operational cost descriptor were then calculated and totaled. A summary of major elements within each operational cost descriptor is shown in Table VI-4 of Section VI.

Average traffic statistics per flight based on PSA data covering number of passengers, vehicle capacity, available seat miles, and revenue passenger miles were then computed and are shown on the lower portion of Table VI-4. The total percent of cost of each operational cost descriptor, except the constant, was then divided by its appropriate average traffic statistic per flight. Each of the resulting percents, including the constant cost per departure was then multiplied by the average cost per departure to arrive at the equation shown at the bottom of Table VI-5 of Section VI.

b. Distribution of Each Component to Operational Descriptors

(1) Passenger Service Expense

This item covers costs of activities contributing to the comfort, safety, and convenience of passengers while in flight and when flights are interrupted.

Stewardess expense, which includes stewards, were allocated largely to available seat miles (80 percent) since this parameter includes aircraft size and distance. Normally this cost is allocated on the basis of block hours; however, the short stage-length nature of the airlines operation made this unnecessary. Although the minimum number of cabin attendants is fixed by FAA regulation (Ref. C-9) based on the seating capacity of the aircraft, airlines sometimes schedule more than minimum crews, particularly for peak demand flights. In addition it was felt that as an aircraft increased in size the additional crew member required by FAA regulation for each unit of 50 seats would probably occur before such an addition became mandatory. Therefore, in the California Corridor, some allocation (20 percent) of stewardess expense was made to revenue passenger miles. Similar logic was used for passenger food expense, which on PSA is limited to beverage service. Allocating a large part of passenger service expense to available seat miles in effect relates this cost to the capacity offered by the system. In the Midwest Triangle Arena, the current practice of scheduling full crews was not altered. Therefore, in the Midwest Triangle, 100 percent of stewardess expense was allocated to available seat miles. The allocation of all other IOC components to the various operational descriptors was the same for both the California Corridor and the Midwest Triangle Arenas. Passenger liability insurance was allocated (100 percent) to revenue passenger miles as this is the parameter on which the insurance premium rate is established. Other passenger service expenses, such as interrupted trip expense, uniforms and injuries, loss, and damage, were allocated between number of passengers (47 percent), available seat miles (30 percent) and revenue passenger miles (23 percent).

(2) Aircraft and Traffic Servicing

This includes costs of ground personnel at various airports for handling and servicing aircraft and traffic, scheduling of flight and cabin crews, landing and parking aircraft, and space rental of facilities.

Landing fees were allocated to aircraft capacity (100 percent) as these fees are generally assessed on the basis of landing weight.

For the other costs associated with terminal operations, fixed and variable cost analyses were conducted. It was assumed that, based on the frequency of service offered, a large proportion of these costs would be fixed and that some costs would vary with the volume of traffic, especially the peak flows. Allocations were therefore made to the constant cost per departure (30 percent), numoer of passengers (42 percent), and aircraft capacity (28 percent).

An attempt was made to differentiate aircraft and traffic servicing expenses as a function of type of airport; however, since cost data of these types were not available, the composite average of all airports was used in the IOC cost model. While these costs reflect experience at generally major airports within the California Corridor, it was judged that the improvements necessary to general aviation airports to accommodate STOL service would result in similar overall airport operating costs to airlines.

(3) Reservations and Sales

This item covers staffing and operating a reservation system and ticket sales offices and developing tariffs and operating schedules.

Passenger ticket sales commissions were allocated to revenue passenger miles (100 percent) since this parameter relates both to number of passengers and stage length. These commissions are based on a percentage of passenger fare for tickets sold by travel agents.

Other reservation and ticket sales office expenses were allocated to number of passengers (42 percent) and to available seat miles (58 percent) on the basis that 58 percent of these costs were relatively fixed and that 42 percent would be sensitive to the variations in the volume of traffic.

(4) Advertising and Publicity

This item covers the costs allocated to promoting the use of air transportation and the carrier. These costs were allocated to number of passengers (40 percent) and available seat miles (60 percent). This split was based on the same rationale as was used for other reservation and ticket sales office expenses.

(5) General and Administrative

These costs are of a general corporate nature with the major items being property taxes, accounting, and data processing, and were allocated to available seat miles (100 percent) since this parameter relates to the capacity provided by the system.

(6) Depreciation — Ground Property and Equipment

Covers depreciation of property and equipment other than flight equipment. Ground equipment costs related to the aircraft were allocated to aircraft capacity (49 percent) while leasehold improvements and furniture, fixtures, and office equipments were allocated to available seat miles (51 percent) in order to relate these costs against the capacity provided by the system.

c. Comparison of Aerospace Developed California Corridor IOC Model

It can be seen from Table C-6 that the IOCs developed for the California Corridor are far below the other methods, particularly at high load factors, and do not show the high sensitivity to variations in load factor that the other methods do. The Pan American method (Ref. C-10), although developed for V/STOL applications, has costs and trends similar to the 1971 Boeing method (Ref. C-11) which is based on composite domestic trunk experience. These costs appear representative of carriers typically operating a large mixed fleet which serves many airports with significant cargo and baggage handling costs.

Table C-6. Indirect Operating Cost Comparisons, Pan American NEC, Boeing 1971, and Aerospace California Corridor Methods; 120-Passenger Aircraft, 350 mi Stage Length, TGW 96,500 lb, 1-h Block Time

IOC Cost Element-Per Departure	Load Factor 10%			Load Factor 100%		
	Pan Am NEC	1971 Boeing	Aerospace California Corridor	Pan Am NEC	1971 Boeing	Aerospace California Corridor
Passenger Service						
Flight Attendance	$ 30.00	$ 59.28	$ 41.66	$ 30.00	$ 59.28	$ 56.64
Food	1.26	22.08	1.56	12.60	220.40	2.13
Pass. Liability Insurance		1.30	3.47		13.02	34.69
Other Passenger Service	6.30	1.68	5.79	63.00	16.80	17.75
Total Passenger Service	$ 37.56	$ 84.34	$ 52.48	$105.60	$309.50	$111.21
Aircraft and Traffic Servicing						
Control and Communications		$ 19.84			$ 19.84	
Aircraft Servicing	$ 30.00	35.71		$300.00	35.71	
Landing Fees	43.43	22.20	$ 17.45	43.43	22.20	$ 17.45
Passenger Handling		9.25			92.46	
Baggage Handling		19.34			193.44	
Cargo Handling and Liability		62.30			62.30	
Servicing Administration		7.67			19.38	
Other	$ 86.85		42.77	86.85		80.68
Total Aircraft & Traffic Servicing	$160.28	$176.31	$ 60.22	$430.28	$445.33	$ 98.13
Reservations and Sales						
Pass. Reservations & Sales		$ 18.01			$180.10	
Passenger Commissions	$ 10.80	3.36	$ 3.96	$108.00	33.60	$ 39.65
Cargo Reserv., Sales Comm.		3.02			3.02	
Reservations & Ticket Offices	21.00		23.90	210.00		39.56
Total Reservations & Sales	$ 31.80	$ 24.39	$ 27.86	$318.00	$216.72	$ 79.21
Advertising and Publicity	$ 18.00	$ 7.32	$ 20.80	$180.00	$ 52.68	$ 33.43
Ground Facilities & Depreciation	$ 12.23	$ 35.64	$ 12.20	$ 12.23	$ 35.64	$ 12.20
General and Administrative	$ 20.72	$ 30.82	$ 75.55	$ 96.36	$ 59.88	$ 75.55
Total Indirect Operating Cost	$280.59	$358.82	$249.11	$1.142.47	$1,119.75	$409.73

The difference shown can be attributed to the service characteristics of high-density short haul markets, where the fleet size and number of airports served are minimized along with cargo and baggage handling. In addition, the nature of the needed reservations and sales and advertising and publicity also result in significant cost differences.

C.4 MIDWEST TRIANGLE IOC MODEL FORMULATION

The Boeing 1971 IOC formula (Ref. C-12) was used as the original data base for developing a midwest IOC formula. This formula was developed from domestic trunk statistical and cost data and is shown in Table C-7. From these cost parameters IOC costs, reflective of a 120-passenger aircraft over a 350 s mi stage length, were calculated for a 50 percent load factor with the resulting costs shown in Table C-8 under the unadjusted column. Adjustments were then made to IOC cost elements to reflect the characteristics of high-density short-haul STOL service. The resulting costs, indicated in the modified for STOL service column of Table C-8, were based on adjustments to passenger service, traffic servicing, reservations and sales, and advertising and publicity as described in Table C-9.

C.5 RETURN ON INVESTMENT (ROI)

a. California Corridor

California Public Utility Commission criteria were used to develop the ROI model for the California Corridor. An example of the PUC criteria is shown in Table C-10. As can be seen, the rate base is sensitive to original aircraft cost, spares, depreciation, and other assets. Unlike the CAB, the California PUC makes no allowance for interest and allows only federal and state income taxes actually paid to be included in the rate base.

b. Midwest Corridor

The CAB computes return on investment and tax allowance (Ref. C-13) by five investment categories:

1. Total long term debt
2. Convertible debentures

Table C-7. 1971 Boeing IOC Formula, $/Trip

1971 BOEING IOC FORMULA

$/TRIP

Account	Formula		(1970) K FACTORS INT.	DOM.
5500 - PASSENGER SERVICE				
Flight Attendants	$K_1(\frac{FC\ Seats}{K_2}+\frac{TC\ Seats}{K_3})(BT)$	K_1	19.77	14.82
		K_2	15	20
		K_3	30	40
Food	$[K_1 + K_2(BT)]\ [(TC\ Seats \times LF) + (K_3 \times FC\ Seats \times LF)]$	K_1	2.04	1.63
		K_2	.22	.21
		K_3	2.5	1.7
Passenger Liability Ins.	K [(FC Seats X LF) + (TC Seats X LF)](Dist)		.00031	.00031
Other Passenger Service	K [(FC Seats X LF) + (TC Seats X LF)](Dist)		.00077	.00040
6100 - AIRCRAFT SERVICING				
Control & Communications	K (Aircraft Departures)		72.43	19.84
Aircraft Servicing	$K(\frac{Max.\ Gross\ Wt.}{1000})$		.90	.37
Landing Fees	$K(\frac{Max.\ Gross\ Wt.}{1000})$		.56	.23
6200 - TRAFFIC SERVICING				
Passenger Handling	K [(FC Seats X LF) +(TC Seats X LF)] (Empl/OB Ratio)		2.59	1.15
Baggage Handling	$K_1\ [(FC\ Seats \times LF \times K_2) + (TC\ Seats \times LF \times K_3)]$ (Empl/OB Ratio)	K_1	144.50	120.30
		K_2	.033	.020
		K_3	.022	.020
Cargo Handling	K(Tons Mail, Express & Freight) (Empl/OB Ratio X .75)		144.50	120.30
Cargo Liability Ins.	K(Tons Express & Freight)(Dist)		.0053	.0053
6300 - SERVICING ADMIN.	K(Aircraft Servicing + Traffic Servicing)		.0455	.0455
6500 - RESERVATIONS & SALES				
Pass. Reservations & Sales	K [(FC Seats X LF) + (TC Seats X LF)] (Empl/OB Ratio)		6.71	2.24
Passenger Commissions	K [(FC Seats X LF) + (TC Seats X LF)] (Dist)		.0022	.0008
Cargo Reser. & Sales	K (Tons Express & Freight)(Empl/OB Ratio X .75)		13.46	4.48
Cargo Commissions	K (Tons Express & Freight)(Dist)		.0062	.0022
6600 - ADVERTISING & PUBLICITY				
Passenger Allocation	K [(FC Seats X LF) + (TC Seats X LF)] (Dist)		.0018	.0012
Cargo Allocation	K (Tons Express & Freight)(Dist)		.0082	.0065
5200, 5300, 7000 - GROUND FACILITIES				
Maintenance	K (Direct Maint. of Flt. Equip.)		.0669	.0669
Burden	K (Direct Maint. of Flt. Equip.)		.0258	.0258
Depreciation	K (Depreciation of Flt. Equip.)		.1468	.1468
7000 - AMORTIZATION	K (Depreciation of Flt. Equip.)		.0951	.0761
6800 - GENERAL & ADMIN.	K_1 [(Total Operating Expense) - K_2 (Depreciation of Flt. Equip.)]	K_1	.0499	.0397
		K_2	1.242	1.223

* Total Operating Expense = (Direct Operating Cost) + (Indirect Operating Cost less Gen. & Administrative)

DEFINITION OF TERMS

FC Seats	- First Class Seats	Max. Gross Wt.	- Maximum Certificated Gross Weight
TC Seats	- Tourist Class Seats	Empl/OB Ratio	- Passenger Emplaned/On-Board Ratio
BT	- Block Time - hr	Direct Maint. of Flt. Equip.	- Direct Maint. Cost of Flt. Equip. Excl. Burden
LF	- Passenger Load Factor	Depreciation of Flt. Equip.	- Depreciation Costs of Flight Equipment Including Spares
Dist.	- Trip Distance - mi		

Table C-8. 1971 Boeing IOC Formula, 120-Passenger Aircraft, 350 mi, TGW 96,500 lb, 1-h Block Time, Load Factor of 50 Percent

IOC Cost Element - Per Trip	Unadjusted	Modified for STOL Service
Passenger Service		
Flight Attendants	$ 59.28	$ 59.28
Food	110.40	11.04
Pass. Liability Insurance	6.51	6.51
Other Passenger Service	8.40	8.40
Total Passenger Service	$184.59	$ 85.23
Aircraft Servicing		
Control & Communications	$ 19.84	$ 19.84
Aircraft Servicing	35.71	35.71
Landing Fees	22.20	22.20
Total Aircraft Servicing	$ 77.75	$ 77.75
Traffic Servicing		
Passenger Handling	$ 46.23	$ 46.23
Baggage Handling	96.72	29.02
Cargo Handling	60.45	6.05
Cargo Liability Insurance	1.85	.19
Total Traffic Servicing	$205.25	$ 81.49
Servicing Administration	$ 12.88	$ 7.25
Reservations and Sales		
Pass. Reservations and Sales	$ 90.05	$ 90.05
Pass. Commissions	16.80	16.80
Cargo Reservations and Sales	2.25	.23
Cargo Commissions	.77	.08
Total Reservations and Sales	$109.87	$107.16
Advertising and Publicity		
Passenger Allocation	$ 25.20	$ 25.20
Cargo Allocation	2.28	.23
Total Advertising & Publicity	$ 27.48	$ 25.43
Ground Facilities		
Maintenance	$ 9.71	$ 9.71
Burden	3.75	3.75
Depreciation	14.61	14.61
Total	$ 28.07	$ 28.07
Amortization	$ 7.57	$ 7.57
General and Administrative	$ 43.74	$ 34.47
Total Indirect Operating Cost	$697.20	$151.12

Table C-9. 1971 Boeing IOC Formula, Modifications Incorporated for High-Density Short-Haul Service Characteristics

IOC Cost Category	Modifications
1. Passenger Service	
a. Passenger Food	Decreased cost from \$1.84 to \$.184 per passenger to reflect beverage-only service.
b. Other Passenger Service	Decreased sensitivity to load factor as frequency and operational characteristics of service establish a high proportion of fixed rather than variable costs.
2. Traffic Servicing	
a. Passenger Handling	Decreased sensitivity to load factor.
b. Baggage Handling	Eliminated 70 percent of costs which are believed due to the impact of medium and long haul service and decreased sensitivity to load factor.
c. Cargo Handling and Liability Insurance	Eliminated 90 percent of costs since short haul cargo service does not appear to be significant as that associated with medium and long haul service.
3. Reservations and Sales	
a. Passenger Reservations and Sales	Decreased sensitivity to load factor.
b. Cargo Reservations and Sales and Commissions	Eliminated 90 percent of costs.
4. Advertising and Publicity	
a. Passenger Allocation	Decreased sensitivity to load factor.
b. Cargo Allocation	Eliminated 90 percent of costs.

Table C-10. Return on Investment, California Public Utility Commission Criteria ($\$x10^3$)

	Cal PUC Example
Original Aircraft Cost	$ 84,856.4
Spares and Flight Equipment	28,136.6
Less: Accrued Depreciation	14,374.0
Total Aircraft and Spares Cost	$ 98,619.0
Other Assets	$ 12,675.0
Rate Base	$111,294.0
Rate of Return	10.5%
Return on Investment	$ 11,685.9
Percent of Original Aircraft Cost	13.8%

3. Common stockholder equity

4. Preferred stock equity

5. Retained earnings

The percentage rate of return for each of these categories is computed and applied to the aircraft value and related investment to determine annual amount needed. Since this method requires detailed financial data that is beyond the scope of normal airline economic analysis, an ROI method that was developed by Sikorsky Aircraft (Ref. C-14) was utilized and was calibrated to CAB investment base criteria (Ref. C-15).

The Aerospace ROI method, shown in Table C-11 considers such parameters as:

1. Original aircraft cost

2. Spares and flight equipment

3. Average value of flight equipment

4. Other asset factor

5. Average debt/liability ratio

6. Interest rate

7. Tax rate

8. Return on investment

The factors associated with average value of flight equipment (67.8 percent) and other assets (116 percent) were extracted from the data developed in Table C-12 from data listed in Reference C-15. Use of this method provides a rational technique with sufficient flexibility to account for many variable elements.

Table C-11. Return on Investment, Civil Aeronautics Board Criteria ($\$ \times 10^3$)

Aerospace Method	Factors		CAB Method (Calibration)		
Operating Profit			Investment Base		
Original Aircraft Cost		$3,302.1	Original Aircraft Cost		$3,302.1
Spares and Flight Equipment	25.0%	825.5	Overhaul Cost		323.4
Total Aircraft and Spares		$4,127.6	Total Aircraft and Overhaul Cost		$3,625.5
Average Value of Flight Equipment	.678	2,798.5	Investment Required per Aircraft	150%	$5,438.3
Other Asset Factor	116%	3,246.3			
Return on Investment	12.0%	$389.6			
Interest					
Total Aircraft and Spares		$4,127.6			
Average Debt/Liability Ratio	.75	3,095.7			
Average Value of Flight Equipment	.678	2,098.9			
Interest Rate	7.0%	$146.9			
Operating Profit (Less Interest)		($242.7)			
Profit Before Taxes (After Interest)		$505.6			
Return on Investment (Including Interest)	12.0%	$652.5	Return on Investment	12.0%	$652.6
Percent of Original Aircraft Cost		19.7%			

Table C-12. Return on Investment, Derivation of Factors

<u>Average Value of Flight Equipment</u>		
Total Certificated Route Air Carriers		
Flight Equipment Cost		$10,622,125
Flight Equipment, Net		7,196,741
Percent of Cost		.678
<u>Other Assets</u>		
Ground Property and Equipment, Net		843,284
Land		6,284
Construction Work in Process		399,897
Non-Operating Property and Equipment, Net		77,675
Total Other Assets		$ 1,327,140
Percent Other Assets to Flight Equipment		118.4%
Calibration Adjustment		116.0%
<u>Average Debt/Liability</u>		
Debt Element		
Notes Payable	431,213	
Long Term Debt	$5,695,918	
	$6,127,131	
Liabilities	$8,347,380	
Debt/Liability	73.4%	
CAB Analysis	75.0%	

REFERENCES

C-1 Aircraft Turbine Engines, Development and Procurement Cost, The Rand Corporation RM-4670 PR, July 1965.

C-2 Estimating Aircraft Turbine Engine Costs, J. P. Large, The Rand Corporation RM-638411-PR, September 1970.

C-3 Cost Escalation Trends, American Aviation, April 14, 1969.

C-4 1971 Janes All the World Aircraft.

C-5 Ibid 1.

C-6 Ibid 2.

C-7 Local Service Air Carriers' Unit Cost, March 31, 1971.

C-8 "Standard Method of Estimating Comparative Direct Operating Costs of Turbine-Powered Transport Airplanes," Air Transportation Association of America (December 1967).

C-9 Federal Aviation Regulation, Part 121.391.

C-10 Direct Exhibits, Pan American World Airways, Northeast Corridor VTOL Investigation, Civil Aeronautics Board, Docket 19078, Exhibit PA-703.

C-11 Boeing 1971 DOC and IOC Formula Update, The Boeing Company, D 6-22514, July 1971.

C-12 Ibid 14.

C-13 Air Carrier Financial Statistics, September 1970.

C-14 Sikorsky Final Information Response, Northeast Corridor VTOL Investigation, Civil Aeronautics Board, Docket 19078.

C-15 Local Service Carriers' Unit Costs, Civil Aeronautics Board, March 31, 1970, B 737-200.

APPENDIX D

MODEL CALIBRATION

CONTENTS

TABLES

APPENDIX D

MODEL CALIBRATION

D.1 THE ROLE OF PREFERENCE FACTORS

As explained in Appendix B, one of the inputs to the modal split simulation model consists of a lognormal preference factor distribution for each travel mode. These distributions effectively serve to calibrate traveler preferences for the specific trips, modes, and regions being modeled.

Preference factors take into account qualitative aspects of a traveler's decision which are not reflected in a pure cost-time tradeoff. For example, an air traveler may attach a certain amount of importance to the prestige and comforts of flying. A certain car traveler may feel that the scenic stops along the way compensate to a certain extent for the extra time involved. However, another traveler may think only of the problems with having a car in a strange city and, therefore, shy away from this mode. Some travelers take a train just because they like to ride on trains.

D.2 METHODOLOGY

In order to determine preference factor distributions for each mode and each city-pair, modal split data for some base year is needed. Using such data, an iterative procedure is undertaken to determine preference factor distributions which produce modal split results corresponding to the actual base year modal splits. These distributions will then be used directly for the 1980 modal split runs under the assumption that qualitative traveler altitudes and preferences will not change significantly in the interim. The CTOL preference factor distribution will be used for the STOL mode for the 1980 time period.

Although the model has a provision for specifying different preference factor distributions for business and nonbusiness travelers, this facility was not used due to the lack of calibration data broken down into these two categories. A single preference factor distributions for each mode was therefore used for both types of travelers.

The deviation parameter of the lognormal preference factor distribution is determined for each mode, based upon the estimated variation of traveler attitudes towards that mode. The purpose of the calibration procedure is to determine the distribution medians for each mode.

In order to obtain a unique set of preference medians for each calibration exercise, the median of the car preference factor distribution is always set equal to 1.0. For n potential travel modes, this leaves n-1 unknown preference medians with which to fit n-1 known and independent fractional modal splits.

The base year chosen for calibration was 1967. Tables V-10 and V-11 of Section V present the percent modal splits and actual number of trips for California and the Midwest for this base year. Port and service-path data for 1967 were obtained in the manner described in Section V. D. Different regional demand distributions and traveler incomes were used for the two time periods (1967 and 1980) in addition to different mode characteristics, which are discussed below. All other inputs, such as traveler party size, fraction of business travelers and local travel functions, were the same for the two time periods.

D.3 CALIFORNIA CORRIDOR

a. Mode Characteristics for 1967

Port characteristics for the 1967 time period were the same as those documented in Table A-1 of Appendix A, with the exception of parking costs at certain CTOL ports which are noted in Table D-1.

Service path characteristics were substantially different for the two time periods. Table D-2 presents the California service path characteristics which were used for the 1967 calibration runs.

b. Preference Factor Medians

The mode preference factor medians for each city-pair fell into three distinct groups depending on the intercity distance. San Francisco-Sacramento (70 miles apart) and Los Angeles - San Diego (110 miles) required

Table D-1. CTOL Parking Costs for 1967

California Corridor	
Port	Daily Parking Cost
LLAX	$2.00
LBUR	2.00
FSFO	2.00
FOAK	1.00
FSJC	1.00
Midwest	
Port	Daily Parking Cost
COHARE	$2.10

Table D-2. California Corridor Service Path Characteristics (1967)

Los Angeles - San Francisco

Mode	Service Path	Cost ($)	Time (hr)	Frequency (No. depart/hr)
CAR	LGOR-FSJ	12.32	6.22	∞
	LSFV-FSJ	13.80	6.89	∞
	LOXN-FSJ	12.76	6.69	∞
CTOL	LLAX-FSFO	14.18	.92	2.43
	LLAX-FSJC	14.18	.77	.5
	LLAX-FOAK	14.18	1.00	1.07
	LBUR-FSFO	14.18	.92	.32
	LONT-FSFO	15.60	1.25	.36
	LSNA-FSFO	15.60	1.25	.5
BUS	LCBD-FCBD	10.50	9.00	1.35
RAIL	LCBD-FCBD	14.00	10.00	.21

Los Angeles - Sacramento

Mode	Service Path	Cost ($)	Time (hr)	Frequency (No. depart/hr)
CAR	LSFV-SCBD	14.24	6.82	∞
	LSFV-SGALT	13.32	6.40	∞
CTOL	LLAX-SSMF	15.00	1.00	.85
	LONT-SSMF	24.67	2.05	.15
BUS	LCBD-SCBD	10.50	9.58	.77
RAIL	LCBD-SCBD	13.50	11.17	.08

Los Angeles - San Diego

Mode	Service Path	Cost ($)	Time (hr)	Frequency (No. depart/hr)
CAR	LSNA-DOCN	2.00	.90	∞

Table D-2. California Corridor Service Path Characteristics (1967) (Cont'd)

Los Angeles - San Diego (Cont'd)

Mode	Service Path	Cost ($)	Time (hr)	Frequency (No. depart/hr)
CAR	LSNA-DCBD	3.52	1.54	∞
	LRIV-DCBD	3.88	2.20	∞
	LRIV-DRIV	2.04	1.78	∞
	LCAP-DOCN	1.04	.46	∞
	LCAP-DCBD	2.56	1.1	∞
CTOL	LLAX-DSAN	6.67	.33	1.15
	LBUR-DSAN	6.67	.42	.27
	LSNA-DSAN	9.24	.50	.23
BUS	LCBD-DCBD	3.73	2.50	1.38
	LCBD-DOCN	2.89	1.75	1.38
	LLGB-DCBD	3.28	2.25	.54
	LSNA-DCBD	2.98	1.90	.69
	LSB-DCBD	4.03	2.33	.54
RAIL	LCBD-DCBD	4.00	2.75	.23

San Diego - Sacramento

Mode	Service Path	Cost ($)	Time (hr)	Frequency (No. depart/hr)
CAR	DOCN-SCBD	18.56	8.82	∞
	DOCN-SGALT	17.64	8.39	∞
	DCBD-SCBD	20.12	9.48	∞
	DCBD-SGALT	19.20	9.05	∞
CTOL	DSAN-SSMF(a)	22.66	1.53	.12
	DSAN-SSMF(b)	22.66	2.71	.58
BUS	DCBD-SCBD	12.95	13.50	.46

(a) Direct flight
(b) Connecting flight

Table D-2. California Corridor Service Path Characteristics (1967) (Cont'd)

San Francisco - San Diego

Mode	Service Path	Cost ($)	Time (hr)	Frequency (No. depart/hr)
CAR	FSJ-DCBD	18.12	8.89	∞
	FSJ-DOCN	19.68	9.55	∞
CTOL	FSFO-DSAN	19.97	1.43	1.15
	FOAK-DSAN	19.97	1.43	.27
BUS	FCBD-DCBD	14.00	13.00	.54
RAIL	FCBD-DCBD	18.00	13.00	.08

San Francisco - Sacramento

Mode	Service Path	Cost ($)	Time (hr)	Frequency (No. depart/hr)
CAR	FVAL-SCBD	2.30	1.18	∞
	FVAL-SDAV	1.60	.75	∞
	FDAV-SCBD	.68	.33	∞
	FDAV-SDAV	0.0	0.0	∞
CTOL	FSFO-SSMF	9.08	.5	1.14
BUS	FCBD-SCBD	3.14	2.20	1.78
	FOAK-SCBD	2.82	1.80	1.78
	FSJ-SCBD	3.52	4.75	.29
	FWOD-SCBD	.71	.42	.36

significantly different preference factor medians than did the other city-pairs (340-450 miles). Therefore, one set of preference factor distributions was used for all of the longer stage length city-pairs, while each of the shorter stage length city-pairs had its unique set.

Table D-3 presents the preference factor medians obtained for each city-pair. Since San Francisco - Sacramento and Los Angeles - San Diego each have their own unique set of preference factor distributions, the modal split predicted by the simulation model for the 1967 time period for these city-pairs was in direct agreement with that of the 1967 survey presented in Table V-10 of Section V. However, for the other longer stage-length city-pairs, the distributions used represent a compromise between the set obtained for each individual city-pair. Table D-4 compares the predicted modal split for these city-pairs with the actual survey modal split for the 1967 time period. In most cases the agreement is very good and in no case is the absolute percent error greater than 1.8 percent.

D.4 MIDWEST TRIANGLE

The Midwest service path characteristics for the 1967 calibration time period are documented in Table D-5.

Consistent with the philosophy adopted on the California corridor, "long" and "short" sets of preference factor medians were determined for the Midwest Triangle. These are presented in Table D-6. The Detroit - Cleveland 1967 predicted modal split was in agreement with the survey figures presented in Table V-11, since a unique set of preference distributions was used for that city-pair. For Chicago - Cleveland and Chicago - Detroit a compromise set was used. Table D-7 compares the predicted and actual modal split for these city-pairs using a single set of preference factor medians. As was the case in the California corridor, the agreement is very good with a maximum absolute error less than 1.84 percent.

Table D-3. California Corridor Preference Factor Distribution Medians, City-Pairs

Mode	San Francisco - Sacramento	Los Angeles - San Diego	Others
CAR	1.00	1.00	1.00
CTOL	1.10	.91	.74
BUS	1.05	1.06	.71
RAIL	no service	.76	.67

Table D-4. Comparison of Predicted and Actual Modal Splits for Longer Stage Lengths in California Corridor

Los Angeles - San Francisco				
	CAR	CTOL	BUS	RAIL
SURVEY	55.11	42.26	1.86	0.77
MODEL PREDICTION	54.78	42.26	2.08	0.88
Los Angeles - Sacramento				
	CAR	CTOL	BUS	RAIL
SURVEY	63.36	32.88	2.77	0.99
MODEL PREDICTION	63.46	33.04	2.54	0.96
San Francisco - San Diego				
	CAR	CTOL	BUS	
SURVEY	54.38	42.64	2.98	
MODEL PREDICTION	54.36	43.01	2.63	
San Diego - Sacramento				
	CAR	CTOL	BUS	
SURVEY	66.86	27.33	5.81	
MODEL PREDICTION	66.71	29.13	4.16	

Table D-5. Midwest Triangle Service Path Characteristics (1967)

Chicago - Detroit

Mode	Service Path	Cost ($)	Time (hr)	Frequency (depart/hr)
CAR	CCHI-DCHL	9.56	4.15	∞
CTOL	COHARE-DMETRO	19.85	1.00	1.72
BUS	CCBD-DCBD	9.90	5.55	.64
RAIL	CCBD-DCBD	13.49	5.50	.14

Chicago - Cleveland

Mode	Service Path	Cost ($)	Time (hr)	Frequency (depart/hr)
CAR	CCHI-VAMH	17.00	4.48	∞
	CCHI-VLOR	11.67	6.79	∞
CTOL	COHARE-VHOPKN	23.50	1.11	1.0
BUS	CCBD-VCBD	12.15	7.5	.79
RAIL	CCBD-VCBD	16.25	6.6	.07

Detroit - Cleveland

Mode	Service Path	Cost ($)	Time (hr)	Frequency (depart/hr)
CAR	DROC-VAMH	5.48	1.94	∞
	DTOL-VAMH	4.20	1.40	∞
CTOL	DMETRO-VHOPKN	11.00	.58	1.28
	DCITY-VBURKE	14.70	.72	1.72
BUS	DCBD-VCBD	6.40	3.15	.72

Table D-6. Midwest Triangle Preference Factor Medians

Mode	City-Pairs: Detroit - Cleveland (90 mi)	City-Pairs: Chicago - Cleveland, Chicago - Detroit (240 - 310 mi)
CAR	1.00	1.00
CTOL	0.66	1.02
BUS	0.66	0.75
RAIL	No Service	0.65

Table D-7. Comparison of Predicted and Actual Modal Split for the Midwest Triangle

Chicago - Cleveland	CAR	CTOL	BUS	RAIL
SURVEY	61.42	33.36	3.93	1.29
MODEL PREDICTION	59.58	33.48	5.34	1.60

Chicago - Detroit	CAR	CTOL	BUS	RAIL
SURVEY	69.54	22.88	6.04	1.54
MODEL PREDICTION	70.95	22.70	4.99	1.36

APPENDIX E

STOLPORT SETTING AND SERVICE
PATH SELECTION

CONTENTS

FIGURES

TABLES

APPENDIX E

STOLPORT SITING AND SERVICE PATH SELECTION

The STOLport siting and service path selection process was implemented in the California Corridor without the benefit of finalized operating cost models. Hence, the approach used in the California Corridor was different from that used in the Midwest Triangle Arena where service path sets were selected after the IOC and DOC models were developed.

E.1 CALIFORNIA CORRIDOR

Potential STOLport sites consisted of all public use general aviation and air carrier airports within the regions, augmented by new ports to be located at Chavez Ravine and Patton Military Reservation in the Los Angeles region and adjacent to the CBD in the San Francisco region. A total of 59, 43, 19, and 20 ports were identified for the Los Angeles, San Francisco, San Diego, and Sacramento regions, respectively. Figures E-1 through E-4 illustrate the relative locations of these ports.

The method used to select the best set of ports can be best illustrated by using the Los Angeles region as an example. The original 59 candidate airports were reduced to 31, based on their proximity to one another as well as to the centers of travel demand defined in the arena characterization (Section V). Modal split simulations were conducted assuming STOL service, with uniform frequency of service (45 minute departures) and fares ($16.00), over all possible service paths from the ports postulated in the Los Angeles region to a single port, Crissy Field, in the San Francisco region. Thus, the differences in demand between the Los Angeles ports were due solely to their locations relative to one another. The ranking of the relative levels of demand attracted to each of the 31 ports, as defined by modal split simulation, is listed under the 2nd cull of Table E-1.

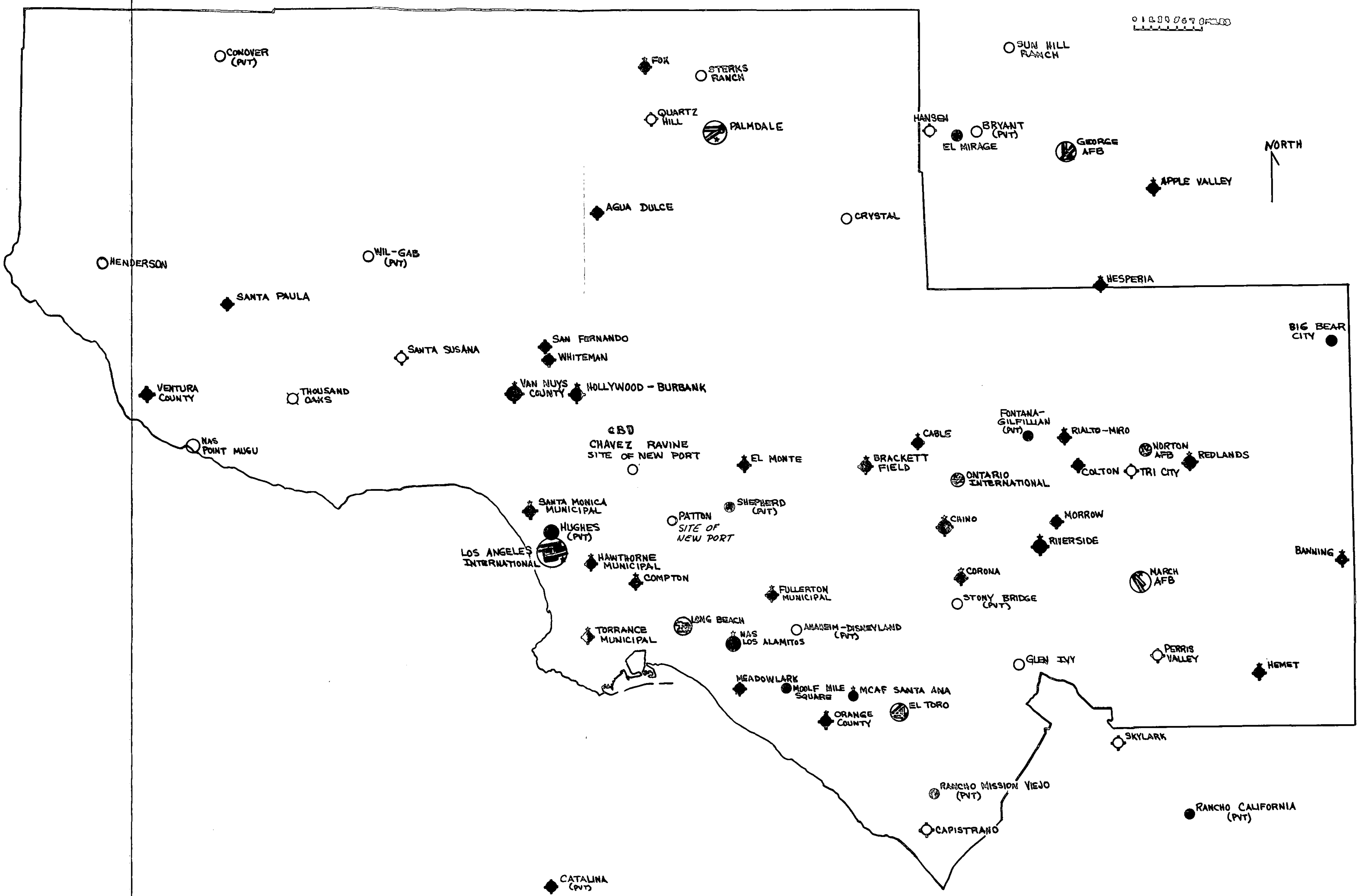


Figure E-1. Los Angeles Region Potential STOLport Site Locations

FOLDOUT FRAME 1

FOLDOUT FRAME 2

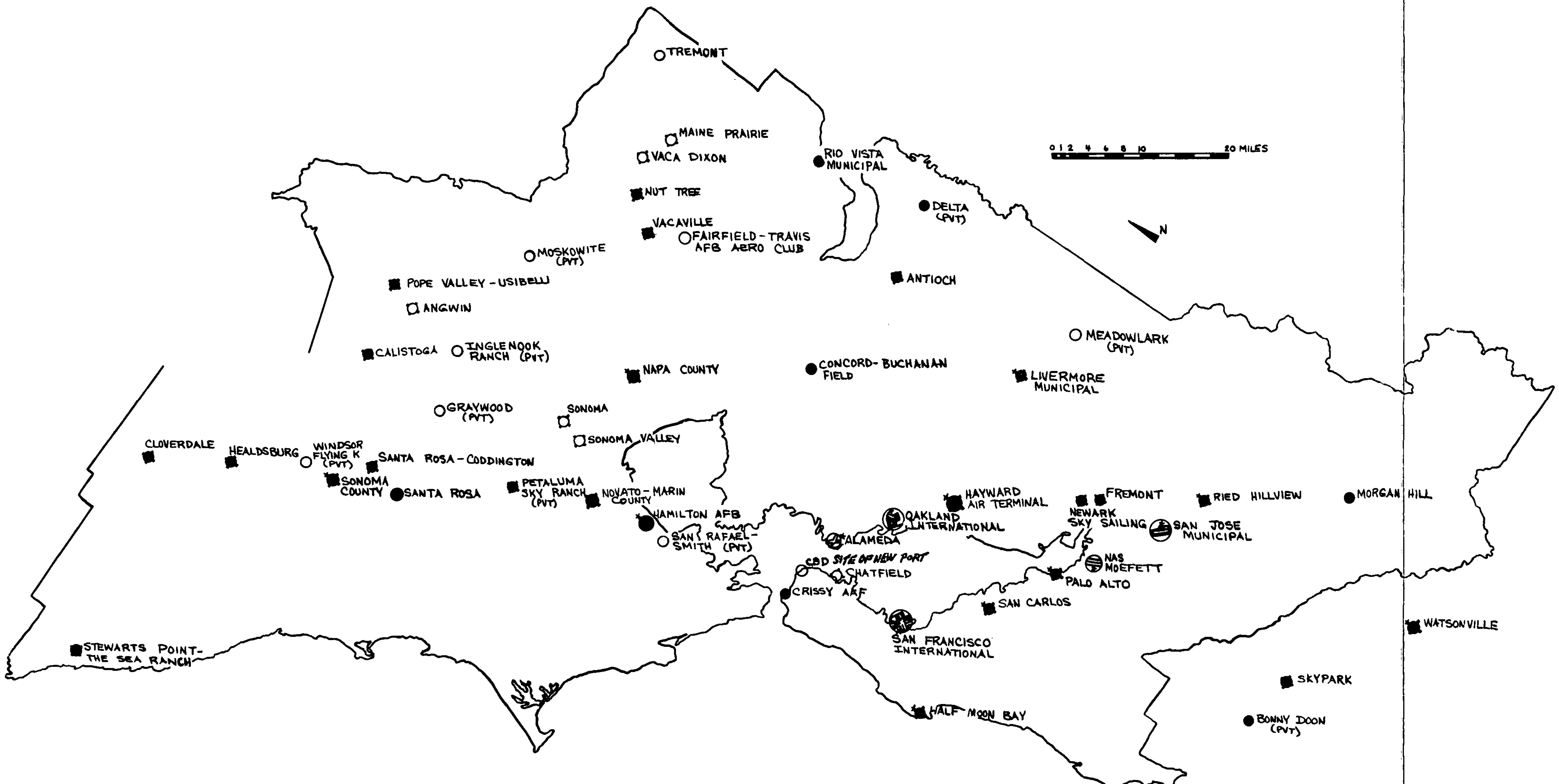


Figure E-2. San Francisco Region Potential STOLport Site Locations

FOLDOUT FRAME 1

FOLDOUT FRAME 2

2

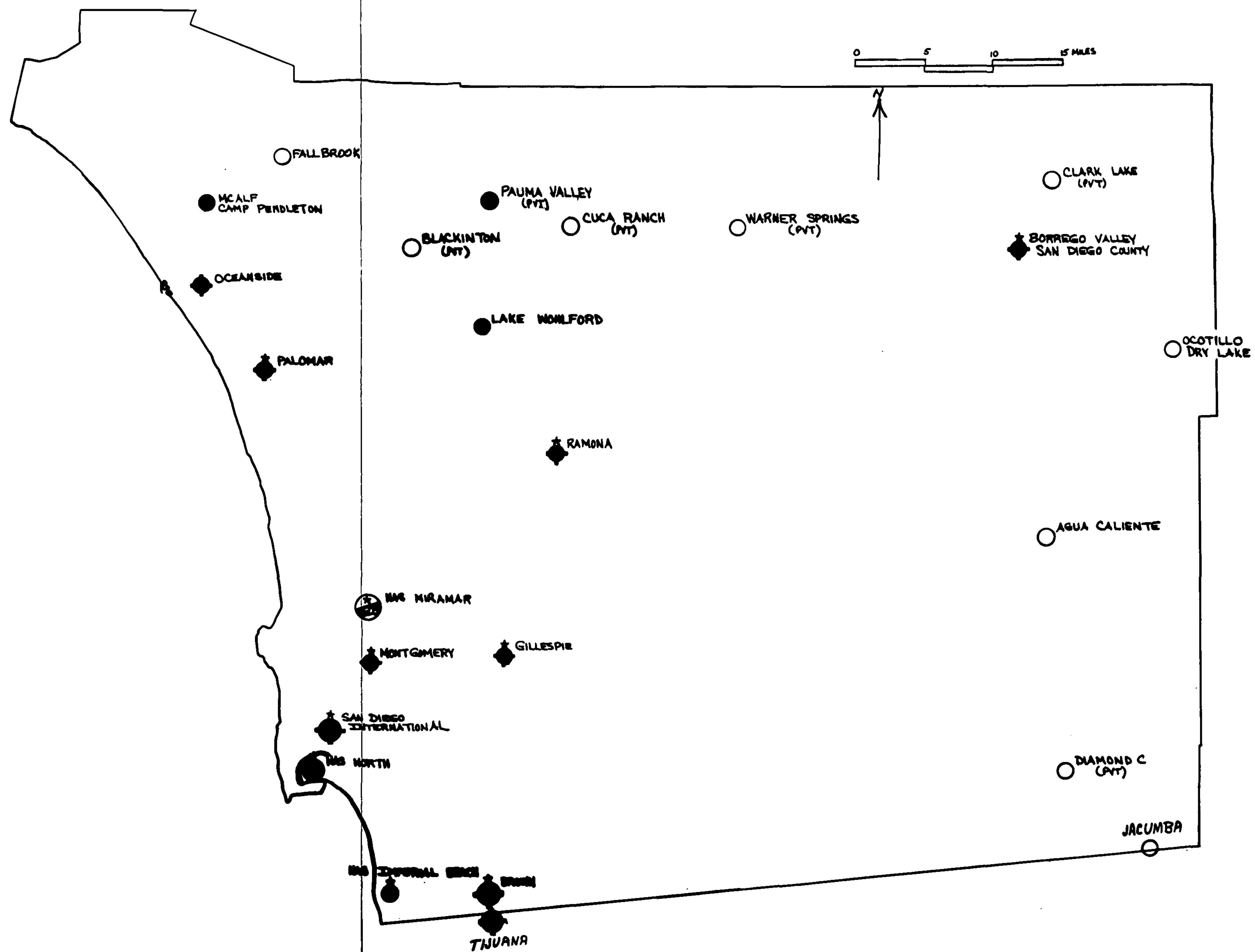


Figure E-3. San Diego Region Potential STOLport Site Locations

FOLDOUT FRAME 1

FOLDOUT FRAME 2

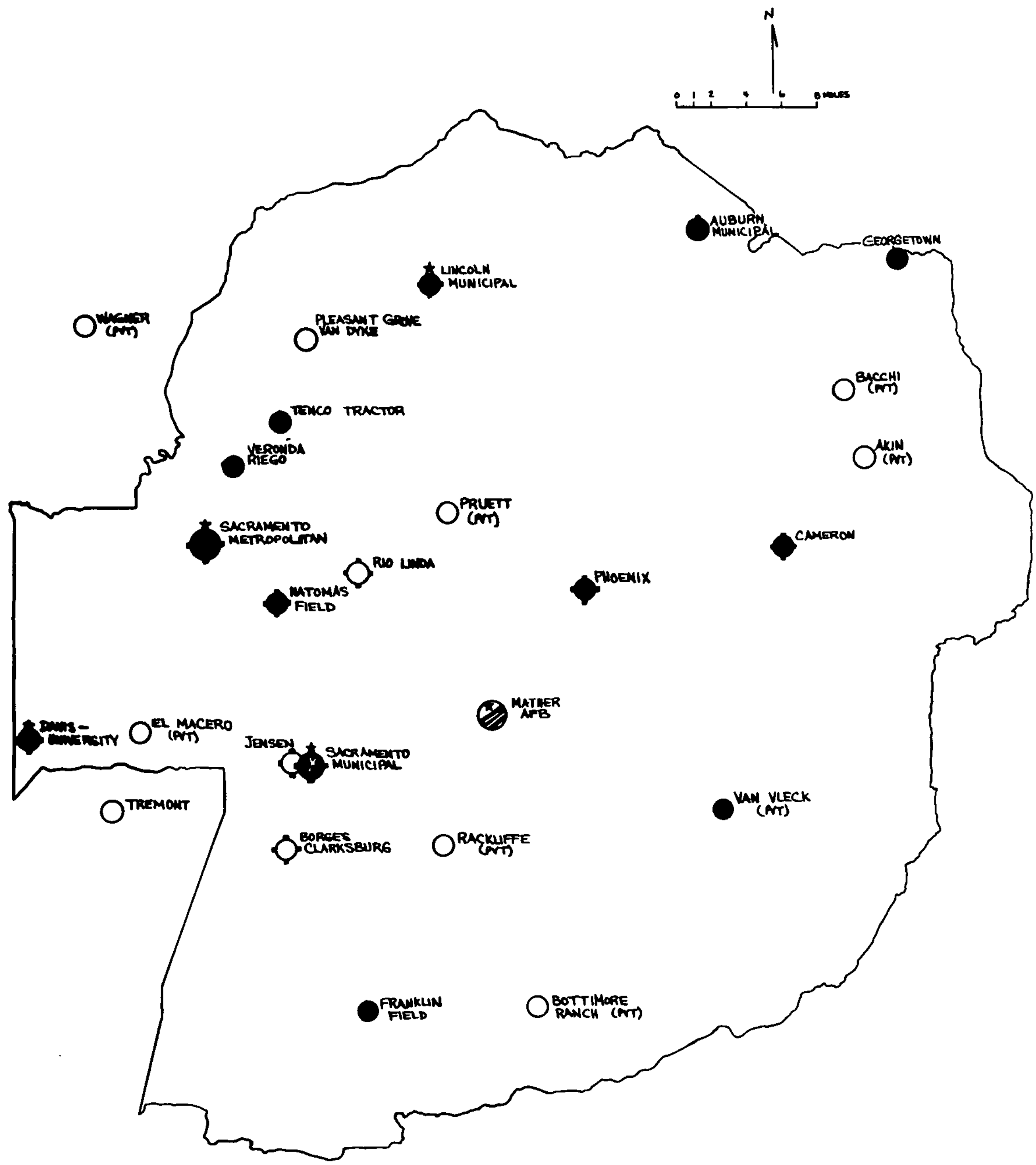


Figure E-4. Sacramento Region Potential STOLport Site Locations

Table E-1. Example of California Corrido STOLport Selection Process, Los Angeles Region

Candidate STOLports After First Cull	2nd Cull		3rd Cull		4th, 5th, 6th and 7th Cull		8th Cull		Final Rank
	Rank	Action	Rank	Action	Rank	Action	Rank	Action	
Chavez Ravine	2	Retained	2	Retained	1a	Retained	5	Retained	2
Fullerton Municipal	1	↕	1	↕		↕	1	↕	1
Morrow	21		4				3		3
Van Nuys	5		5		1c		2	Retained	4
El Monte	3		3		1b		4	Excluded	
Hawthorne Municipal	12		7		1d		6	↕	
Orange County	8		15				7		
Santa Monica Municipal	6		8			Retained	8	Excluded	
Brackett Field	9		11		2b	Excluded			
Compton	4		6		2d	↕			
Patton	Omitted		Omitted		2a				
Santa Susana	11		13		3c				
Torrance Municipal	13		10		3d				
Whiteman	17		14	Retained	2c	Excluded			
Burbank	7		19	Excluded					
Capistrano	15		16	↕					
Long Beach	10		18						
Los Angeles International	18		21						
Meadowlark	14		12						
Ontario International	24		20						
Riverside	16		9						
Ventura County	19	Retained	17	Excluded					
Banning	29	Excluded							
Big Bear City	30	↕							
Corona	22								
Hemet Ryan	28								
Palmdale	20								
Perris Valley	27								
Redlands	25								
Santa Paula	26								
Tri City	23	Excluded							

Based primarily on this ranking, the less popular port locations were eliminated and the process was repeated. Over twenty different combinations of Los Angeles region ports were tested, using the modal split program. The results of the decisive tests presented in Table E-1 which identified Chavez Ravine, Fullerton Municipal, Morrow, and Van Nuys as the preferred set of four ports.

This process was repeated for the other three regions within the California Corridor, identifying Lindbergh Field and Sacramento Municipal as the best single port locations in the San Diego and Sacramento regions, respecitvely, and Crissy Field, Palo Alto, Concord and Marin as the best four locations within the San Francisco region.

Service path selection had to be related to the STOL system operating costs; otherwise, if dependent only on the total level of demand produced, an excessive and uneconomical number of service paths would result. Therefore, in the absence of a finalized version of the operating cost models, a chart similar to that presented in Figure E-5 was constructed for each of the six city-pairs. These charts approximated the minimum levels of demand, in percent modal split, which would produce economic viability on individual service paths supported by the minimum fleet size of one aircraft.

Modal split simulations were conducted usually at several fare levels between various combinations of the best port sets identified for each of the four regions. Tables E-2 through E-7 present the result of this analysis which covered STOL service between the Los Angeles and San Francisco regions. Ideally, the maximum number of service paths (16) would be preferred since it captured the largest number of travelers (36 percent at $16.00, 13.56 percent at $21.60). However, since that demand is divided between 16 service paths, it also produces the lowest demand per weakest service path, generating a modal split of 0.64 percent between Marin and Morrow and 0.36 percent between Marin and each of two other Los Angeles region ports for the $16.00 and $21.60 fares respectively. These values are

PERCENT MODAL SPLIT REQUIRED TO PRODUCE AN ECONOMICALLY VIABLE SERVICE PATH

- STOL CONCEPT - AUGMENTOR WING
- CITY PAIR - LOS ANGELES -- SAN FRANCISCO
- SERVICE PATH - CHAVEZ RAVINE -- CRISSY FIELD

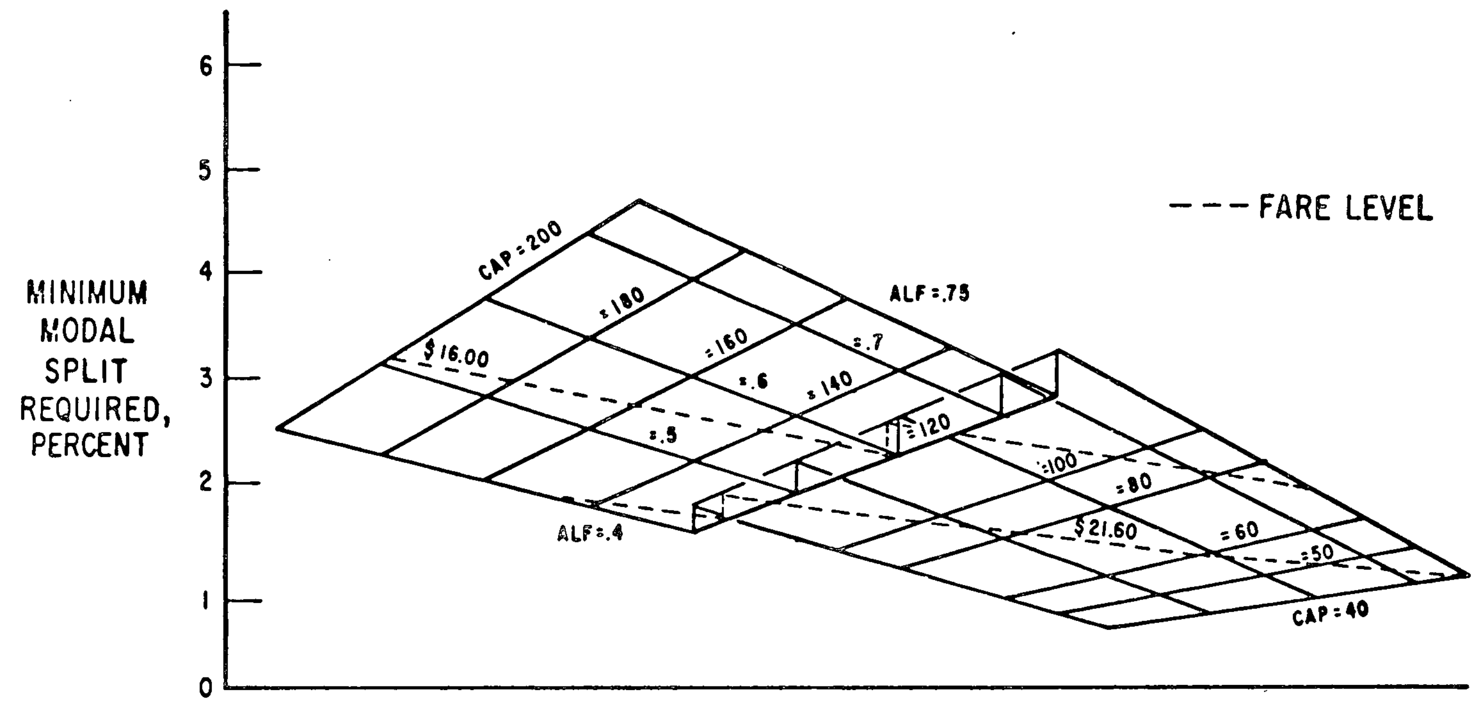


Figure E-5. Percent Modal Split Required for an Economically Viable Service Path

Table E-2. Los Angeles - San Francisco Service Path Selection Data, Percent Total Demand (Service Paths 16, STOL freq of serv 1 flt/h)

STOL Fare $16.00, incl tax

L.A. Ports / S.F. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	3.56	4.68	2.28	2.8	13.32
Palo Alto	4.32	3.44	2.0	2.64	12.40
Concord	2.36	1.96	.72	1.04	6.08
Marin	1.48	1.16	.64	.92	4.2
Total	11.72	11.24	5.64	7.4	36.0

STOL Fare $21.60, incl tax

L.A. Ports / S.F. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	1.32	1.72	1.16	.96	5.16
Palo Alto	1.32	1.04	.76	.52	3.64
Concord	1.04	1.0	.40	.28	2.72
Marin	.88	.36	.44	.36	2.04
Total	4.56	4.12	2.76	2.12	13.56

Table E-3. Los Angeles - San Francisco Service Path Selection Data, Percent Total Demand (Service Paths 10, STOL freq of serv 0.73 flt/h)

STOL Fare $16,00, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	7.68	5.20	3.16	3.28	19.32
Palo Alto	4.16	3.08	1.72	2.00	10.96
Concord	3.08	2.36	-	-	5.44
Marin	-	-	-	-	-
Total	14.92	10.64	4.88	5.28	35.72

STOL Fare $21.60, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	2.40	2.16	1.60	1.20	7.36
Palo Alto	1.04	.92	.64	.44	3.04
Concord	1.08	1.24	-	-	2.32
Marin	-	-	-	-	-
Total	4.52	4.32	2.24	1.64	12.72

Table E-4. Los Angeles - San Francisco Service Path Selection Data, Percent Total Demand (Service Paths 7, STOL freq of serv 0.73 flt/h)

STOL Fare $16.00, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	7.84	6.16	3.80	3.44	21.24
Palo Alto	5.52	3.48	-	-	9.00
Concord	4.08	-	-	-	4.08
Marin	-	-	-	-	-
Total	17.44	9.64	3.80	3.44	34.32

STOL Fare $21.60, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	2.44	2.56	1.72	1.20	7.92
Palo Alto	1.20	1.16	-	-	2.36
Concord	1.52	-	-	-	1.52
Marin	-	-	-	-	-
Total	5.16	3.72	1.72	1.20	11.80

Table E-5. Los Angeles - San Francisco Service Path Selection Data, Total Percent Demand (Service Paths 4, STOL freq of serv 0.73 flt/h)

STOL Fare $16.00, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	12.80	7.44	-	-	20.24
Palo Alto	6.36	3.88	-	-	10.24
Concord	-	-	-	-	-
Marin	-	-	-	-	-
Total	19.16	11.32	-	-	30.48

STOL Fare $21.60, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	3.68	2.88	-	-	6.56
Palo Alto	1.40	1.24	-	-	2.64
Concord	-	-	-	-	-
Marin	-	-	-	-	-
Total	5.08	4.12	-	-	9.20

Table E-6. Los Angeles - San Francisco Service Path Selection Data, Percent Total Demand (Service Paths 2, STOL freq of serv 0.73 flt/h)

STOL Fare $16.00, incl tax

L.A. Ports / S.F. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	-	13.24	-	-	13.24
Palo Alto	10.96	-	-	-	10.96
Concord	-	-	-	-	-
Marin	-	-	-	-	-
Total	10.96	13.24	-	-	24.20

STOL Fare $21.60, incl tax

L.A. Ports / S.F. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	-	4.12	-	-	4.12
Palo Alto	1.88	-	-	-	1.88
Concord	-	-	-	-	-
Marin	-	-	-	-	-
Total	1.88	4.12	-	-	6.00

Table E-7. Los Angeles - San Francisco Service Path Selection Data, Percent Total Demand (Service Paths 1, STOL freq of serv 0.73 flt/h)

STOL Fare $16.00, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	20.44	-	-	-	20.44
Palo Alto	-	-	-	-	-
Concord	-	-	-	-	-
Marin	-	-	-	-	-
Total	20.44	-	-	-	20.44

STOL Fare $21.60, incl tax

S.F. Ports \ L.A. Ports	Chavez Ravine	Fullerton	Morrow	Van Nuys	Total
Crissy Field	5.04	-	-	-	5.04
Palo Alto	-	-	-	-	-
Concord	-	-	-	-	-
Marin	-	-	-	-	-
Total	5.04	-	-	-	5.04

considerably lower than those defined as the minimum acceptable modal split in Figure E-5. At the other extreme using a single service path, Table E-7, economic viability is ensured, but the total demand is appreciably lower than the multiple service path cases.

Figure E-6 illustrates the tradeoffs between maximizing the total demand while attempting to exceed the modal split required for economic viability on the weakest service path of the set. Based on the relationship shown in Figure E-6, a six-path case was selected as the maximum number of service paths, supplemented by a one- and a three-path set.

The maximum number of service paths was increased to include an 8- and 10-path case based on subsequent analysis which incorporated the finalized operating cost equations.

Two port locations were also changed. Morrow was replaced by Tri-City based on a regional FAA recommendation and Montgomery was substituted for Lindbergh Field because of anticipated congestion at Lindbergh by the 1980 time period. The finalized set of service paths used in the parametric California Corridor analysis is listed in Table VI-2 of Section VI.

E.2 MIDWEST TRIANGLE SERVICE PATH SELECTION

A number of STOLports were identified from those illustrated in Figures E-7 through E-9, based on their proximity to one another and to the centers of demand. New ports were postulated for the Detroit CBD and in the Evanston (floating STOLport on Lake Michigan) area of the Chicago region.

The transportation analysis computer program, including the economic analysis and ROI subroutines, was employed to define the number of passengers carried as a function of vehicle capacity using the Augmentor Wing concept for a number of postulated service path combinations. Use of this technique directly defines those combinations of service paths and vehicle capacities which do not achieve economic viability as measured by an ROI $\geq$ 12 percent.

Based upon the results of this analysis, displayed in Table E-8, final service path sets subsequently used in the parametric analysis of the Midwest Triangle Arean were selected, as presented in Table VI-2 of Section VI.

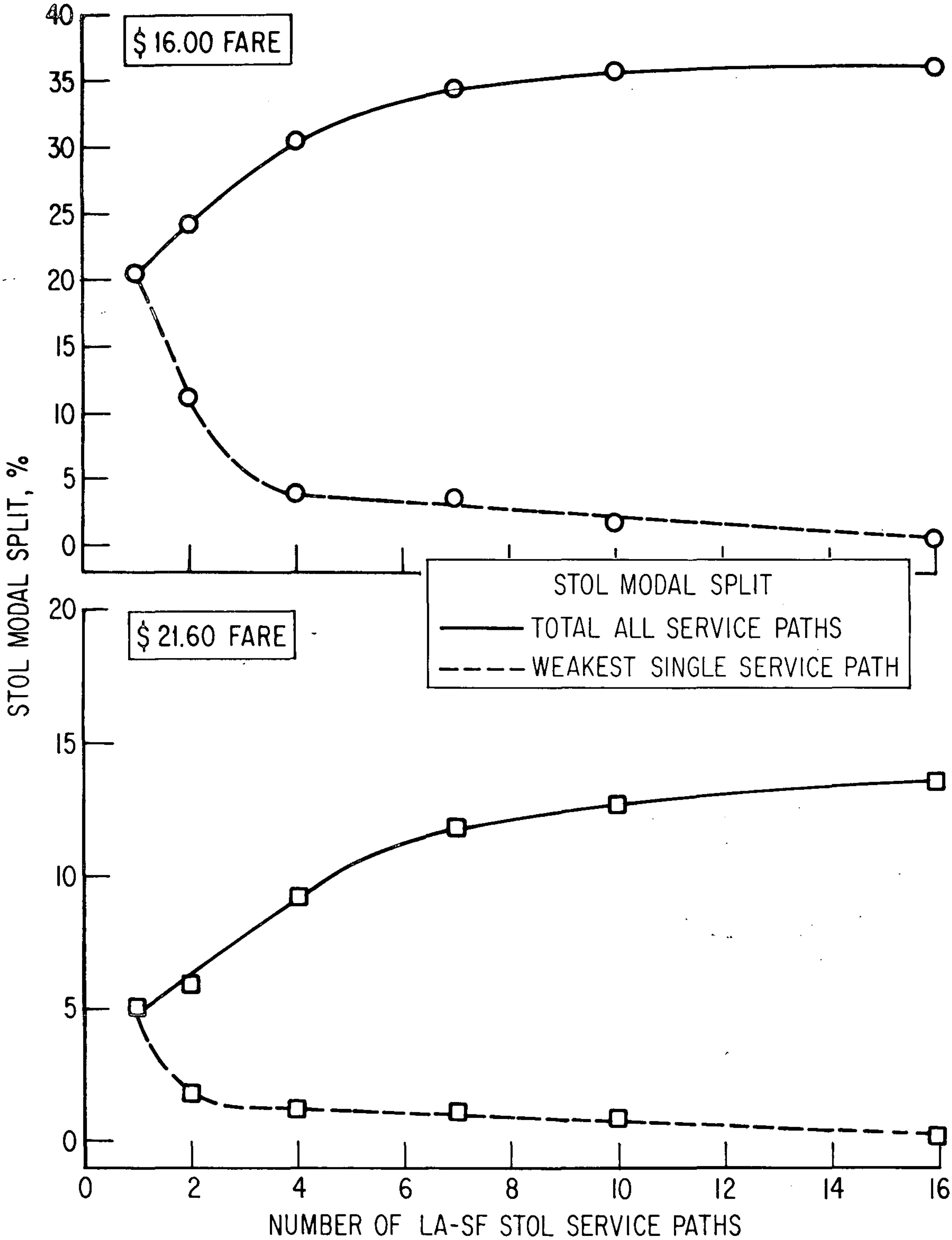


Figure E-6. California Corridor Service Path Evaluation Process

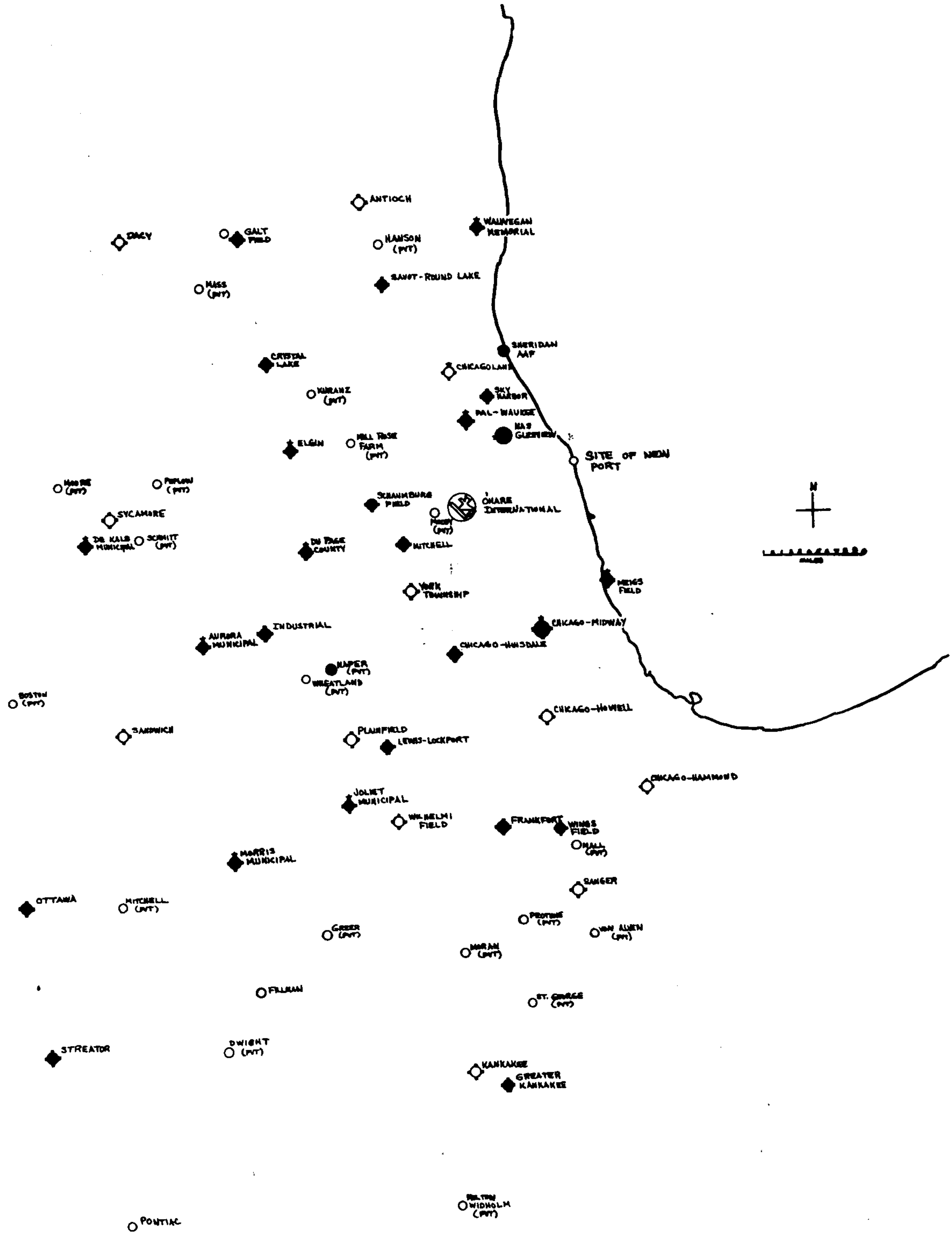


Figure E-7. Chicago Regional Potential STOLport Site Locations

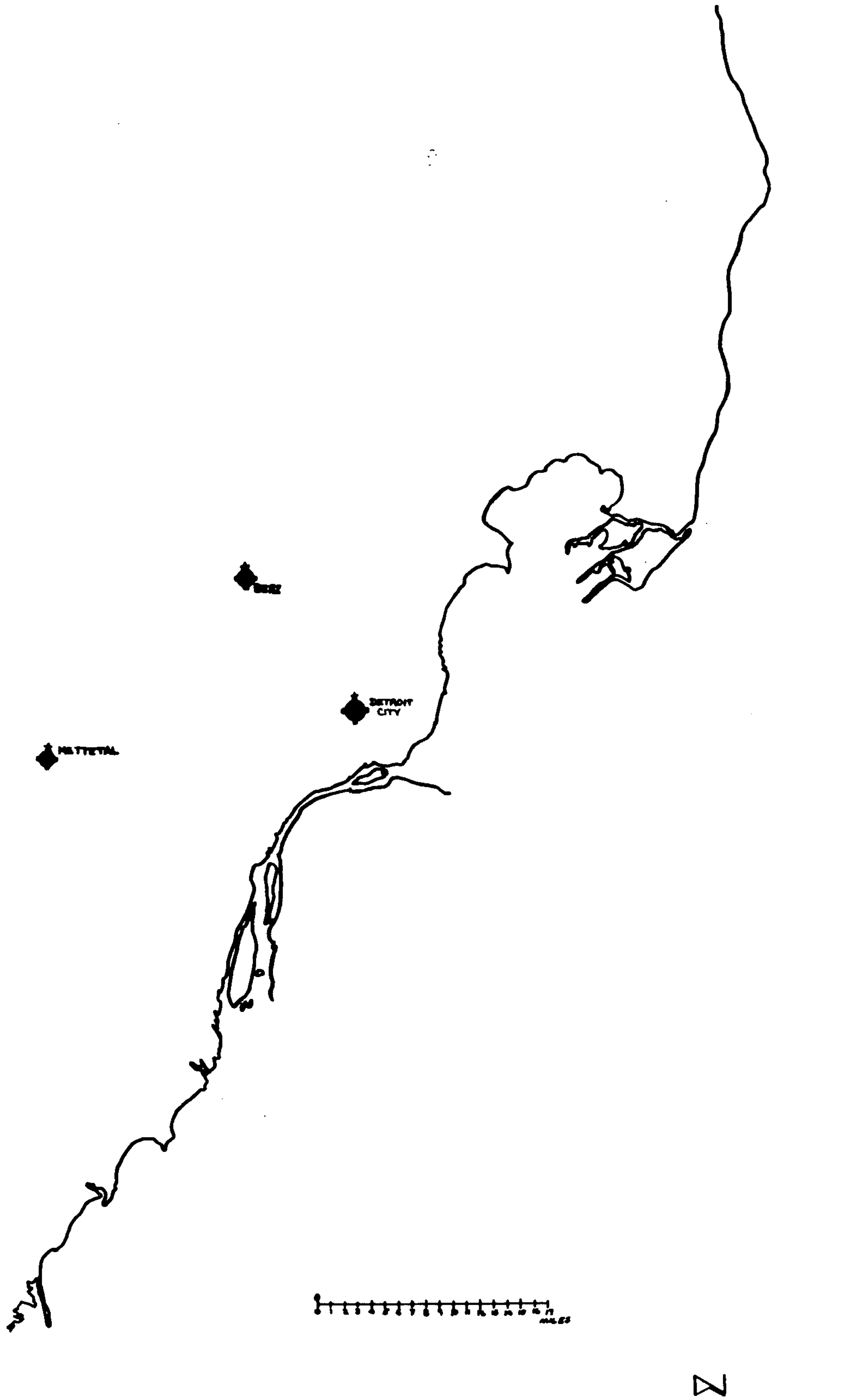


Figure E-8. Detroit Region Potential STOLport Site Locations

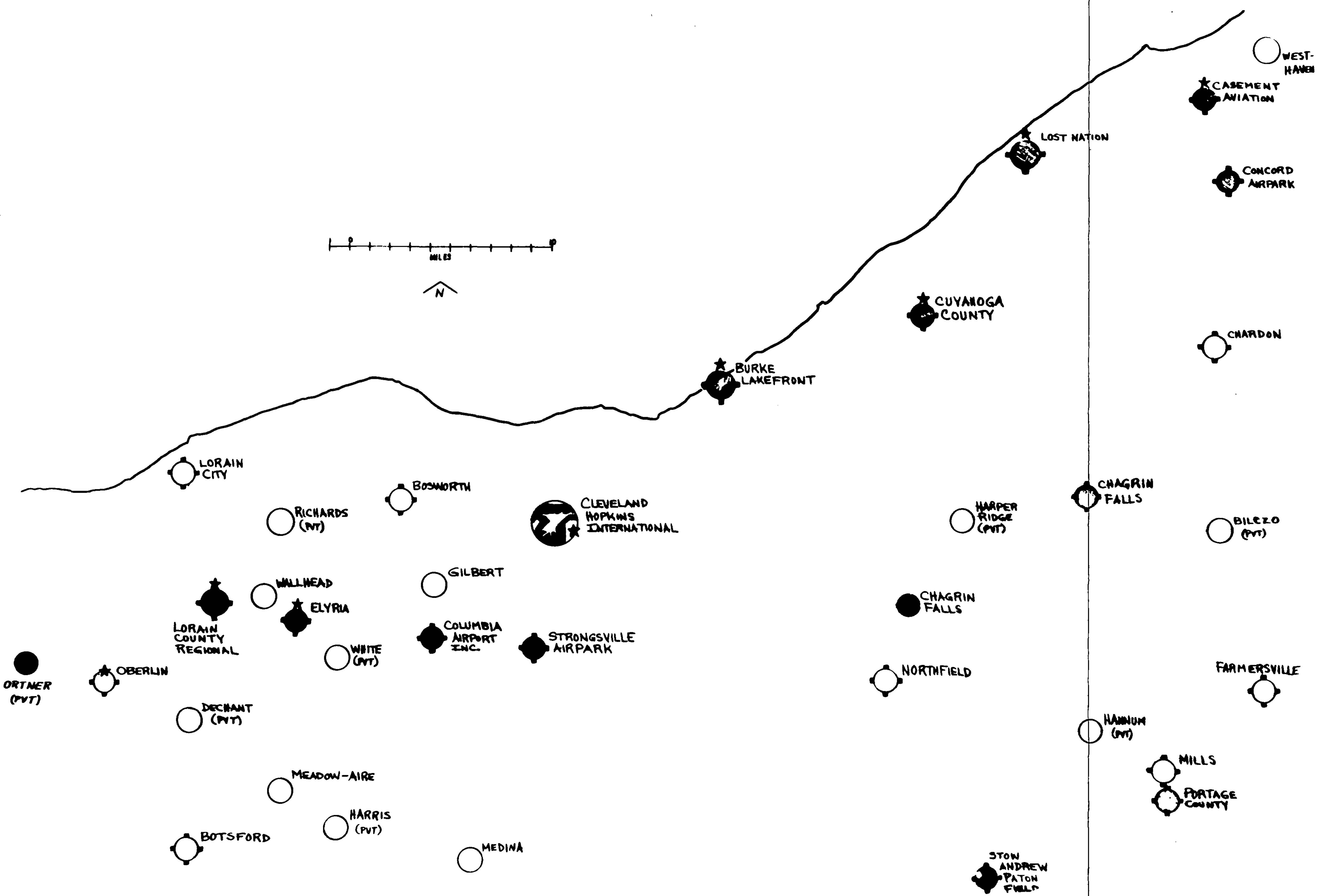


Figure E-9. Cleveland Region Potential STOLport Site Locations

FOLDOUT FRAME 1

FOLDOUT FRAME 2

Table E-8. Midwest Triangle Service Path Sets

CITY PAIR →	CHICAGO-DETROIT													CHICAGO-CLEVELAND					DETROIT-CLEVELAND	
NO. OF SERVICE PATHS IN SET →	1 **	2 **	2	2	2	2	2	2	3 **	3	3	4 **	4	1 **	2 **	2	2	3 **	1 **	1
SERVICE PATHS IN SET →	CMIEGS DCITY	CMIEGS DCITY CMIEGS DMETT	CMIEGS DCITY CMIEGS DBERZ	CMIEGS DCITY CNEW DCITY	CMIEGS DCITY CMIT DCITY	CMIEGS DCITY CHOW DCITY	CMIEGS DCITY CPAL DCITY	CMIEGS DCITY CMID DCITY	CMIEGS DCITY CMIEGS DMETT CMIT DCITY	CMIEGS DCITY CMIEGS DMETT CMIEGS DBERZ	CMIEGS DCITY CNEW DCITY CMIT DCITY	CMIEGS DCITY CMIEGS DMETT CMIT DCITY CMIEGS DBERZ	CMIEGS DCITY CMIEGS DMETT CMIT DCITY CMIT DMETT	CMIEGS VBURKE	CMIEGS VBURKE CMIT VBURKE	CMIEGS VBURKE CMIEGS VBOS	CMIEGS VBURKE CMIEGS VCUYA	CMIEGS VBURKE CMIT VBURKE CMIEGS VBOS	DCITY VBURKE	DNEW VBURKE
VEHICLE CAPACITY	NUMBER OF PASSENGERS CARRIED PER DAY																			
40	1654	2716	2620	2648	2694	2000	2410	2778	2844	2748	2452	2566	1956	1624	1252	1584	1480	1630	688*	678*
50	1936	3436	3084	3080	3394	2734	2894	2774	3536	3482	2956	2788	2838	2088	1710	2038	1914	1778	822*	808*
60	2446	3420	3808	3812	3382	3248	3628	3538	3532	3456	3670	3256	3052	2088	2050	2140	2104	2058	822*	810*
61	2446	3424	3808	3812	3628	3250	3628	3540	3532	3456	3670	3520	3284	1988	2128	2040	2008	2060	822*	810*
70	2916	3668	3070	3336	3632	3722	3396	3530	3776	3710	2886	3452	3474	2282	2020	2140	2108	2162	822*	810*
80	3440	4380	3568	4052	4230	3966	3628	3980	3472	3390	3332	3966	3956	2278	2204	2010	1984	1960	822*	810*
90	3912	4120	3774	3818	3864	3722	4090	3742	3726	3618	3818	3970	3964	2464	2496	2294	2286	2026	822*	810*
100	4212	3888	4336	3592	3632	4112	4330	3960	3648	3824	4204	4236	3732	2400	2428	2408	2408	2288	984*	928*
110	4212	4108	4472	3750	3844	4270	4340	4250	4142	4072	4334	4428	3414	2340	2418	2352	2346	2208	984*	928*
120	4058	4368	4336	4108	4196	4112	4332	4102	3848	4220	4198	4418	3896	2176	2286	2298	2270	2120	984*	928*
121	3912	4214	4180	4110	4350	3966	4174	3964	4130	4222	4088	4134	3896	2156	2202	2216	2182	2004	984*	928*
130	4212	4108	3774	4166	4196	3698	4028	4094	4196	4036	4076	4138	3900	2396	2082	2010	2086	1884	984*	928*
140	4358	4142	4296	4130	4038	3940	4168	4234	4228	4204	4164	4132	3886	2494	1884	1840	1892	1802	984*	928*
150	4212	4438	4138	4108	4142	3692	4038	4078	4184	4140	4056	3904	3656	2634	2014	1834	1882	1788	984*	928*
160	4484	4128	4006	4384	4548	2102	4000	3864	4472	4408	3812	3364	3644	2564	2212	2018	2086	1788	846*	928*
170	4484	4428	3636	4534	4556	3890	4134	4162	4622	4548	2200	3364	3644	2564	2358	2126	2176	1788	846*	908*
180	4484	4566	3910	4534	4368	4056	4430	4468	4592	4418	2530	3098	3130	2496	2424	2314	2318	1788	846*	908*
190	4346	4570	4050	4384	4524	4326	4548	4326	4452	4418	3960	3098	3130	2454	2426	2376	2320	1788	846*	908*
200	4474	4436	4090	4350	4374	4330	4416	4124	4430	4244	3604	3088	3094	2542	2366	2318	2242	1788	846*	908*

*No fare produces fair return on investment. Chosen fare minimizes loss.

**Selected service path sets.

CHICAGO PORTS

CMIEGS - MIEGS FIELD
CMIT - MITCHELL
CNEW - NEW PORT AT EVANSTON
CHOW - HOWELL
CPAL - PAL-WAUKEE
CMID - CHICAGO MIDWAY

DETROIT PORTS

DCITY - DETROIT CITY
DMETT - METTETAL
DBERZ - BERZ
DNEW - NEW PORT AT CBD

CLEVELAND REGION PORTS

VBURKE - BURKE LAKEFRONT
VBOS - BOSWORTH
VCUYA - CUYAHOGA CO.

FOLDOUT FRAME 1

 FOLDOUT FRAME 2

APPENDIX F

STOL SCHEDULE DEFINITION

APPENDIX F

CONTENTS

TABLES

APPENDIX F

STOL SCHEDULE DEFINITION

F.1 GROUND RULES FOR SELECTING THE STOL SCHEDULE SET

The approach to STOL aircraft scheduling was to define a set of basic schedules which were uniquely determined by their headway between departures. The specific schedule to be used on a specific path would then be determined by the round trip block time and the number of aircraft assigned to that path.

The fundamental groundrule which was used in the determination of the STOL schedule set was that an aircraft would be dedicated to a single service path in any one day. This somewhat conservative assumption enabled several service paths between a single city-pair to be individually optimized while assuring a realizable schedule.

The second groundrule was that a uniform frequency of service would be provided throughout the day. This was consistent with the operating philosophy of most current short haul carriers. In addition, flights would leave only on the quarter hour (except for a special case of 40 minute headway schedules wherein flights left on the one-third hour points). This also is consistent with current operations.

The third groundrule was that the aircraft would be turned around as quickly as possible, consistent with the second groundrule, in order to maximize the number of round trips per day, but only up to the point where service was provided every half hour. This groundrule also assured that the minimum service on any path would be at least 4 round trips per day for the corridors studied.

The fourth groundrule was that, if an even number of aircraft were assigned to a path, identical schedules would be flown in each direction. If an odd number of aircraft were assigned to the path, the schedules (which in this case can not be identical) would be balanced so that neither direction was favored over the other.

The fifth and final groundrule was that, consistent with all of the above, the schedule set would be optimized to carry the greatest number of passengers, when the passenger's desired departure times were distributed in accordance with the diurnal distribution presented in Section VI. E.

F.2 SCHEDULE SET SELECTION

The modal split/demand matching simulation program was used to determine the best of several candidate schedules for each of the headways considered. For example, several candidate schedules having a 2 hour headway (but with different starting times) were evaluated to determine the one with the largest number of passengers carried (consistent with reasonable two-way balance for odd fleet sizes). The results of these optimizations are shown in Table F-1.

Note that several headways (based on the quarter hour rule) are missing -- 2.5, 3.0, and 3.5. These were omitted because the same number of daily departures could be achieved (while carrying more passengers) by using the next larger headway. Headways greater than 2 hours only occurred for very long-distance, single-aircraft paths using the Deflected Slipstream concept in the California Corridor.

F.3 SCHEDULE APPLICATION

The actual schedule for a given service path under a specific scenario is determined by its minimum headway requirement. The minimum headway requirement is defined as the round trip block time (for that path and aircraft concept and capacity) divided by the fleet size. The assigned headway (and corresponding schedule) is the smallest scheduled headway greater than the minimum headway requirement. Thus for a round-trip block time of 2.9 hours and a fleet size of 2, the minimum headway is 1.45 and the assigned headway is 1.5 (Schedule F in Table F-1).

F.4 SAMPLE SCHEDULE

A sample schedule for the LCBD-FCBD path for the Deflected Slipstream concept is shown in Table F-2. The upper part of the Table gives the round-trip block time as a function of capacity. The lower part of the Table shows

Table F-1. STOL Schedule Set

Schedule	Headway Between Departures	Total Number of Round Trips Per Day	Time of First Departure (AM)	Time of Last Departure	
				Odd Fleet (PM)	Even Fleet (PM)
A	0.5	29	7:00	9:15	9:00
B	0.667	22	7:00	9:20	9:00
C	0.75	19	7:30	9:15	9:00
D	1.0	15	7:00	9:30	9:00
E	1.25	12	7:15	9:30	9:00
F	1.5	10	7:30	9:45	9:00
G	1.75	9	7:15	10:00	9:15
H	2.0	8	7:15	10:15	9:15
I	2.25	7	7:30	10:00	-
J	2.75	6	7:30	10:30	-
K	3.25	5	7:45	10:15	-
L	3.75	4	8:00	9:00	-

the assigned schedule as a function of fleet size and capacity. In the manner outlined in the example, a specific schedule was determined for each path of each city pair as a function of concept, capacity, and fleet size. The fleet size was increased until half hour service (Schedule A) could be provided for all capacities.

Table F-2. Sample Schedule

Deflected Slipstream Aircraft: LCBD-FCBD

Capacity	30	40	50	60	70	80	90	100	110	120
Round-Trip Block Time	2.481	2.520	2.560	2.599	2.640	2.677	2.716	2.755	2.794	2.833

Capacity	121	130	140	150	160	170	180	190	200
Round-Trip Block Time	2.833	2.872	2.911	2.950	2.990	3.029	3.068	3.107	3.146

Fleet Size	Schedule	Headway	Capacities
1	J	2.75	30-90
	K	3.25	100-200
2	E	1.25	30
	F	1.5	40-160
	G	1.75	170-200
3	D	1.0	30-160
	E	1.25	170-200
4	B	0.67	30-70
	C	0.75	80-160
	D	1.0	170-200
5	A	0.5	30
	B	0.67	40-200
6	A	0.5	30-160
	B	0.67	170-200
7	A	0.5	30-200

APPENDIX G

CALIFORNIA CORRIDOR TABULATED RESULTS
(All Costs Expressed in 1970 Dollars)

TABLES

TABLES (Continued)

TABLES (Continued)

Table G-1. California Corridor, Los Angeles - San Franscisco City-Pair, Deflected Slipstream Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
30	1	30.00	254	478	.158	.71	1	12	7056	5621	2533710
30	3	28.50*	830	-4079	-.007	.58	4	48	21903	22158	10134840
30	6	27.00*	1596	-10863	-.044	.58	8	92	39900	43115	20269681
30	8	27.00*	1588	-16838	-.100	.51	9	104	39700	47934	22803391
30	10	24.50*	3312	-25240	-.068	.61	16	182	75133	85078	40539362
40	1	25.50	1224	1546	.144	.70	4	44	28900	23151	11141038
40	3	27.00*	1050	-789	.085	.60	4	44	26250	22836	11141038
40	6	25.50*	2120	-4482	.049	.60	8	88	50056	46130	22282075
40	8	24.50*	2896	-9218	.021	.59	11	122	65696	63355	30637854
40	10	24.50*	2710	-15368	-.035	.53	11	128	61477	65285	30637854
50	1	23.50	2042	3343	.156	.70	6	58	44432	34229	18184625
50	3	22.50	3794	3072	.133	.68	10	112	79042	64534	30307708
50	6	24.50	2592	107	.106	.60	8	86	58800	49545	24246166
50	8	24.50*	2640	-7492	.029	.52	9	102	59889	57089	27276937
50	10	23.50*	3292	-11350	.010	.52	11	126	71631	70403	33338478
60	1	22.50	2518	7715	.214	.72	6	58	52458	37340	19622111
60	3	21.50	4942	1864	.117	.65	13	126	98382	80478	42514575
60	6	20.50	7218	4007	.125	.68	17	176	137008	112025	55595982
60	8	22.50*	4118	-1890	.090	.57	11	120	85792	74109	35973871
60	10	20.50*	7340	-7357	.072	.62	19	196	139324	123237	62136686
70	1	22.50	2520	4854	.169	.62	6	58	52500	39714	21024656
70	3	20.50	6188	7476	.147	.67	14	132	117457	91472	49057530
70	6	20.50	7112	2873	.119	.63	16	162	134996	110970	56065749
70	8	21.50	5510	6298	.147	.61	12	130	109690	87527	42049312
70	10	19.50*	8988	-3874	.090	.62	20	206	162283	139716	70082186

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-1. California Corridor, Los Angeles - San Francisco City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
80	1	21.50	3242	12974	.266	.70	6	58	64540	43117	22392889
80	3	19.50	7566	7660	.143	.65	15	146	136608	107827	55982223
80	6	19.50	8654	11368	.155	.67	17	162	156253	120947	63446519
80	8	18.50	10820	5026	.123	.66	21	204	185343	150746	78375112
80	10	18.50	10666	4145	.120	.65	20	206	182705	150397	74649264
90	1	21.50	3242	10168	.224	.62	6	58	64540	45419	23727434
90	3	18.50	9260	9737	.148	.64	16	160	158620	125010	63273158
90	6	18.50	10352	13819	.159	.67	18	172	177326	136650	71182303
90	8	18.50	10736	15836	.167	.66	18	180	183904	141211	71182303
90	10	18.50	10652	2645	.115	.60	19	196	182465	151471	75136876
100	1	20.50	4030	18200	.307	.69	6	58	76495	48852	25028907
100	3	17.50	10934	18303	.181	.68	16	160	177171	133686	66743751
100	6	17.50	12192	14220	.155	.67	19	182	197556	153432	79258204
100	8	17.50	12622	17498	.166	.67	19	188	204523	157121	79258204
100	10	18.50	10404	6289	.130	.58	17	178	178217	145171	70915235
110	1	20.50	4030	15486	.269	.63	6	58	76495	51087	26297912
110	3	17.50	10934	10900	.148	.62	16	160	177171	139813	70127766
110	6	16.50	14100	834	.108	.63	21	204	215417	179855	92042692
110	8	16.50	14516	6233	.124	.64	21	206	221772	180811	92042692
110	10	16.50	14460	3847	.117	.63	21	208	220917	182342	92042692
120	1	19.50	4972	24701	.355	.71	6	58	89772	54682	27535049
120	3	16.50	12842	16698	.165	.67	17	160	196197	150064	78015973
120	6	16.50	14002	22138	.180	.69	18	170	213919	160615	82605148
120	8	15.50	16386	7480	.127	.66	21	206	235169	191329	96372672
120	10	16.50	14460	3041	.114	.60	20	200	220917	183246	91783497

Table G-1. California Corridor, Los Angeles - San Francisco City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
121	1	19.50	4972	21861	.325	.71	6	58	89772	57477	27657033
121	3	16.50	12842	8866	.136	.66	17	160	196197	157766	78361593
121	6	16.50	14002	13765	.151	.68	18	170	213919	168849	82971099
121	8	16.50	14378	13996	.152	.67	18	178	219664	174363	82971099
121	10	18.50	9836	6757	.134	.56	14	144	168487	137382	64533077
130	1	19.50	4972	19499	.294	.66	6	58	89772	59429	28740907
130	3	16.50	12828	16185	.164	.68	16	146	195983	150881	76642419
130	6	16.50	13974	15834	.159	.66	17	162	213492	166933	81432570
130	8	16.50	14364	16065	.160	.65	17	170	219450	172661	81432570
130	10	16.50	14158	865	.108	.60	18	182	216303	182906	86222721
140	1	19.50	4972	16916	.262	.61	6	58	89772	61569	29916066
140	3	15.50	14832	5456	.122	.66	18	160	212867	173549	89748198
140	6	15.50	15952	17687	.160	.70	18	162	228941	177391	89748198
140	8	15.50	16190	15395	.153	.68	18	170	232356	183099	89748198
140	10	17.50	12090	3109	.116	.55	16	156	195903	162694	79776176
150	1	18.50	6136	27989	.356	.71	6	58	105107	65399	31061097
150	3	15.50	14832	17040	.162	.68	16	146	212867	164575	82829592
150	6	14.50	17510	2772	.113	.68	19	172	235088	195205	98360141
150	8	15.50	16138	8720	.131	.64	18	168	231610	187732	93183291
150	10	16.50	13862	11090	.142	.60	16	154	211781	169439	82829592
160	1	18.50	6136	25489	.325	.66	6	58	105107	67478	32176563
160	3	14.50	16422	15943	.157	.70	16	146	220481	172163	85804167
160	6	14.50	17474	6684	.124	.67	18	162	234605	191501	96529688
160	8	15.50	16140	1434	.109	.60	18	168	231639	193784	96529688
160	10	16.50	13892	4886	.121	.56	16	154	212239	174979	85804167

Table G-1. California Corridor, Los Angeles - San Francisco City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
170	1	18.50	6136	19235	.243	.62	7	58	105107	71231	38806851
170	3	14.50	16422	5868	.122	.66	17	146	220481	179054	94245209
170	6	14.50	17478	1405	.109	.64	18	160	234658	195603	99789045
170	8	15.50	16056	9250	.132	.61	17	154	230433	185625	94245209
170	10	16.50	13838	1077	.108	.54	16	150	211414	176870	88701373
180	1	17.50	7596	32513	.331	.73	7	58	123083	75463	40041163
180	3	13.50	18106	2953	.113	.69	17	146	226325	186683	97242825
180	6	15.50	15908	1735	.110	.58	17	152	228309	189884	97242825
180	8	15.50	16040	6013	.122	.59	17	150	230204	187501	97242825
180	10	16.50	13186	22576	.189	.60	13	122	201453	150820	74362160
190	1	17.50	7596	30016	.308	.69	7	58	123083	77507	41242882
190	3	15.50	14830	18366	.167	.62	14	126	212838	163350	82485764
190	6	15.50	15800	6748	.125	.59	16	142	226759	184444	94269445
190	8	14.50	17512	2455	.112	.61	17	150	235115	194870	100161285
190	10	15.50	15478	2556	.113	.57	16	144	222138	184014	94269445
200	1	17.50	7596	27560	.286	.65	7	58	123083	79521	42412618
200	3	14.50	16422	8918	.132	.62	15	132	220481	177272	90884181
200	6	15.50	15826	10900	.136	.60	16	132	227132	179656	96943127
200	8	15.50	15826	2276	.112	.56	16	142	227132	188280	96943127
200	10	15.50	15238	15174	.155	.59	14	130	218694	171515	84825236

Table G-2. California Corridor Los Angeles - San Francisco Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	1	30.00	254	15.8	71	1	12	7	6	3
40	1	25.50	1224	14.4	70	4	44	29	23	11
50	3	22.50	3794	13.3	68	10	112	79	65	30
60	6	20.50	7218	12.5	68	17	176	137	112	56
70	6	20.50	7112	11.9	63	16	162	135	111	56
80	8	18.50	10820	12.3	66	21	204	185	151	78
90	8	18.50	10736	16.7	66	18	180	184	141	71
100	8	17.50	12622	16.6	67	19	188	205	157	79
110	8	16.50	14516	12.4	64	21	206	222	181	92
120	8	15.50	16386	12.7	66	21	206	235	191	96
121	8	16.50	14378	15.2	67	18	178	220	174	83
130	8	16.50	14364	16.0	65	17	170	219	173	81
140	8	15.50	16190	15.3	68	18	170	232	183	90
150	6	14.50	17510	11.3	68	19	172	235	195	98
160	6	14.50	17474	12.4	67	18	162	235	192	97
170	6	14.50	17478	10.9	64	18	160	235	196	100
180	3	13.50	18106	11.3	69	17	146	226	187	97
190	8	14.50	17512	11.2	61	17	150	235	195	100
200	3	14.50	16422	13.2	62	15	132	220	177	91

Table G-3. California Corridor San Diego - San Francisco City-Pair, Deflected Slipstream Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
30	1	36.00	580	307	.116	.64	3.00	30	19333	16158	7601130
30	2	34.50	840	1511	.146	.70	4.00	40	26833	21499	10134840
30	3	31.50	1420	-1895	.075	.70	7.00	68	41417	36619	17735971
40	1	31.50	1160	1655	.138	.66	5.00	44	33833	26924	13926297
40	2	30.00	1758	2797	.145	.69	7.00	64	48833	38680	19496816
40	3	30.00	1728	5837	.202	.72	6.00	60	48000	35858	16711556
50	1	27.50	1972	4780	.178	.68	6.00	58	50213	38572	18184625
50	2	25.50	2932	1234	.118	.67	9.00	88	69228	57703	27276937
50	3	26.50	2656	4851	.161	.68	8.00	78	65170	51171	24246166
60	1	25.50	2458	6177	.180	.71	7.00	58	58036	43222	22892463
60	2	25.50	2928	6098	.170	.66	8.00	74	69133	53164	26162815
60	3	23.50	3458	3602	.139	.69	9.00	84	75244	60537	29433167
70	1	23.50	2956	8160	.198	.73	7.00	58	64320	46906	24528765
70	2	22.50	3690	8358	.188	.71	8.00	74	76875	57940	28032874
70	3	22.50	3700	286	.108	.63	9.00	84	77083	64898	31536984
80	1	21.50	3396	7300	.183	.73	7.00	58	67606	50449	26125037
80	2	19.50	4234	321	.108	.72	9.00	74	76447	63453	33589334
80	3	23.50	3466	9347	.192	.68	8.00	64	75418	54805	29857186
90	1	19.50	3816	4538	.151	.73	7.00	58	68900	53918	27682007
90	2	20.50	4062	3634	.137	.66	8.00	68	77103	61533	31636579
90	3	19.50	4218	5143	.150	.73	8.00	64	76158	59079	31636579
100	1	18.00	4098	172	.107	.71	7.00	58	68300	57110	29200391
100	2	21.50	3876	237	.107	.57	8.00	68	77161	64333	33371875
100	3	19.50	4220	1563	.118	.66	8.00	64	76194	62040	33371875
110	1	20.50	3626	14737	.292	.75	5.00	44	68827	45822	21914927
110	2	21.50	3872	9892	.195	.65	7.00	54	77081	55614	30680897
110	3	20.50	4060	6628	.165	.64	7.00	58	77065	58861	30680897

Table G-3. California Corridor San Diego - San Francisco City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
120	1	19.50	3816	12116	.252	.72	5.00	44	68900	48126	22945874
120	2	18.00	4436	2806	.129	.68	7.00	54	73933	59007	32124224
120	3	18.00	4422	1076	.114	.66	7.00	56	73700	60503	32124224
121	1	19.50	3816	9551	.220	.72	5.00	44	68900	50653	23047527
121	2	19.50	4198	9973	.205	.72	6.00	48	75797	55390	27657033
121	3	19.50	4164	7786	.183	.69	6.00	50	75183	56962	27657033
130	1	18.00	4098	6370	.179	.72	5.00	44	68300	52894	23950756
130	2	18.00	4408	4963	.153	.71	6.00	48	73467	57660	28740907
130	3	18.00	4394	3057	.135	.68	6.00	50	73233	59332	28740907
140	1	18.00	4098	660	.111	.67	6.00	44	68300	56353	29916066
140	2	18.00	4410	2450	.128	.66	6.00	48	73500	59763	29916066
140	3	18.00	4394	443	.109	.63	6.00	50	73233	61503	29916066
150	1	18.00	4096	7472	.185	.72	5.00	38	68267	51029	25884248
150	2	18.00	4402	9057	.202	.70	5.00	42	73367	54544	25884248
150	3	19.50	4152	9242	.204	.63	5.00	44	74967	55958	25884248
160	1	16.50	4374	3545	.142	.72	5.00	38	66825	53163	26813802
160	2	16.50	4608	3621	.143	.69	5.00	42	70400	56662	26813802
160	3	18.00	4372	4579	.153	.62	5.00	44	72867	58170	26813802
170	1	16.50	4374	1572	.121	.68	5.00	38	66825	54795	27719179
170	2	16.50	4612	1589	.121	.65	5.00	42	70461	58414	27719179
170	3	18.00	4374	2453	.130	.58	5.00	44	72900	59988	27719179
180	1	18.00	4096	1552	.120	.60	5.00	38	68267	55923	28600831
180	2	18.00	4406	2856	.133	.58	5.00	42	73433	59786	28600831
180	3	18.00	4364	2290	.127	.58	5.00	42	72733	59652	28600831

Table G-3. California Corridor San Diego - San Francisco City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
190	1	18.00	4084	12207	.249	.72	4.00	30	68067	46968	23567361
190	2	18.00	4406	835	.113	.55	5.00	42	73433	61484	29459201
190	3	18.00	4366	300	.108	.55	5.00	42	72767	61351	29459201
200	1	16.50	4374	8973	.208	.73	4.00	30	66825	48708	24235782
200	2	19.50	4198	1561	.119	.50	5.00	42	75797	62806	30294727
200	3	19.50	4118	319	.108	.49	5.00	42	74353	62603	30294727

Table G-4. California Corridor San Diego - San Francisco Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	2	34.50	840	14.6	70	4	40	27	21	10
40	2	30.00	1758	14.5	69	7	64	49	39	19
50	2	25.50	2932	11.8	67	9	88	69	58	27
60	3	23.50	3458	13.9	69	9	84	75	61	29
70	3	22.50	3700	10.8	63	9	84	77	65	32
80	2	19.50	4234	10.8	72	9	74	76	63	34
90	3	19.50	4218	15.0	73	8	64	76	59	32
100	3	19.50	4220	11.8	66	8	64	76	62	33
110	3	20.50	4060	16.5	64	7	58	77	59	31
120	2	18.00	4436	12.9	68	7	54	74	59	32
121	2	19.50	4198	20.5	72	6	48	76	55	28
130	2	18.00	4408	15.3	71	6	48	73	58	29
140	2	18.00	4410	12.8	66	6	48	74	60	30
150	2	18.00	4402	20.2	70	5	42	73	55	26
160	2	16.50	4608	14.3	69	5	42	70	57	27
170	2	16.50	4612	12.1	65	5	42	70	58	28
180	2	18.00	4406	13.3	58	5	42	73	60	29
190	2	18.00	4406	11.3	55	5	42	73	61	29
200	1	16.50	4374	20.8	73	4	30	67	49	24

Table G-5. California Corridor Los Angeles - Sacramento Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	1	28.00*	244	07.4	68	1	12	6	6	3
40	1	25.00	598	15.0	75	2	20	14	11	6
50	1	23.00	994	10.7	66	3	30	21	18	9
60	1	19.00	1938	12.8	73	4	44	34	28	13
70	1	19.00	1936	14.5	73	4	38	34	27	14
80	1	18.00	2212	15.2	73	4	38	37	29	15
90	1	17.00	2474	14.6	72	4	38	39	31	16
100	1	16.00	2714	12.8	71	4	38	40	33	17
110	1	17.00	2452	24.4	74	3	30	39	27	13
120	1	16.00	2692	22.8	75	3	30	40	29	14
121	1	16.00	2692	19.8	74	3	30	40	30	14
130	1	15.00	2880	16.8	74	3	30	40	31	14
140	1	15.00	2888	14.2	69	3	30	40	32	15
150	1	15.00	2890	11.8	64	3	30	40	34	16
160	1	15.00	2856	17.5	74	3	24	40	30	16
170	1	15.00	2862	15.6	70	3	24	40	30	17
180	1	13.50	3148	12.4	73	3	24	39	32	17
190	1	13.50	3154	10.8	69	3	24	39	33	18
200	1	16.00	2676	10.6	56	3	24	40	33	18

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-6. California Corridor Los Angeles - San Diego Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	1	16.00*	388	00.9	65	1	20	6	6	3
40	1	15.00	526	10.6	66	1	20	7	6	3
50	1	14.00	666	16.6	67	1	20	9	7	3
60	1	11.50	1694	15.9	74	2	38	18	14	7
70	1	11.00	1986	19.2	75	2	38	20	15	7
80	1	10.50	2164	17.4	71	2	38	21	16	7
90	1	10.00	2528	20.8	74	2	38	23	18	8
100	1	10.50	2084	17.3	69	2	30	20	15	8
110	1	10.00	2422	20.4	73	2	30	22	16	9
120	1	10.00	2432	17.8	68	2	30	23	17	9
121	1	10.00	2432	15.7	67	2	30	23	17	9
130	1	9.50	2770	18.0	71	2	30	24	18	10
140	1	9.00	3106	18.9	74	2	30	26	19	10
150	1	9.00	3132	17.2	70	2	30	26	20	10
160	1	8.50	3464	17.3	72	2	30	27	21	11
170	1	8.50	3484	15.6	68	2	30	27	21	11
180	1	8.00	4006	18.1	74	2	30	30	22	11
190	1	8.00	4034	16.7	71	2	30	30	23	12
200	1	8.00	4044	15.1	67	2	30	30	23	12

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-7. California Corridor San Diego - Sacramento Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	1	31.50	446	11.3	74	2	20	13	11	5
40	1	27.00	598	13.7	75	2	20	15	12	6
50	1	26.00	648	15.4	72	2	18	16	12	6
60	1	22.00	796	12.0	74	2	18	16	13	7
70	1	28.00	514	42.9	73	1	10	13	8	4
80	1	27.00	560	41.2	70	1	10	14	8	4
90	1	25.00	652	42.2	72	1	10	15	9	4
100	1	23.00	718	37.5	72	1	10	15	10	4
110	1	23.00	660	35.2	75	1	8	14	9	4
120	1	21.00	718	30.2	75	1	8	14	9	5
121	1	21.00	720	27.4	74	1	8	14	9	5
130	1	19.00	778	22.1	75	1	8	14	10	5
140	1	16.50	840	13.9	75	1	8	13	10	5
150	1	16.50	856	12.6	71	1	8	13	11	5
160	1	18.00	818	13.6	64	1	8	14	11	5
170	1	18.00	818	11.4	60	1	8	14	11	6
180	1	20.00	762	12.2	53	1	8	14	12	6
190	1	21.00	734	11.3	48	1	8	14	12	6
200	1	22.00	714	10.9	45	1	8	15	12	6

Table G-8. California Corridor San Francisco -Sacramento Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	1	13.00*	500	00.1	69	1	24	6	6	3
40	1	11.50*	698	07.9	73	1	24	7	7	3
50	1	10.00*	900	09.8	75	1	24	8	7	3
60	1	9.00*	1028	06.3	71	1	24	9	8	3
70	1	8.00*	1248	06.3	74	1	24	9	8	4
80	1	7.50*	1370	03.9	71	1	24	10	9	4
90	1	7.50*	1324	07.0	74	1	20	9	8	4
100	1	7.50*	1338	04.8	67	1	20	9	9	4
110	1	6.50*	1598	03.0	73	1	20	10	9	4
120	1	6.00*	1790	01.7	75	1	20	10	10	5
121	1	6.00*	1790	-00.4	74	1	20	10	10	5
130	1	6.00*	1804	-01.8	69	1	20	10	10	5
140	1	6.00*	1810	-03.4	65	1	20	10	11	5
150	1	6.00*	1810	-05.1	60	1	20	10	11	5
160	1	6.00*	1756	-03.7	61	1	18	10	10	5
170	1	6.00*	1764	-04.8	58	1	18	10	11	6
180	1	6.00*	1766	-06.0	55	1	18	10	11	6
190	1	6.00*	1766	-07.2	52	1	18	10	11	6
200	1	6.00*	1766	-08.3	49	1	18	10	12	6

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-9. California Corridor City-Pair Summary, Deflected Slipstream Concept

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
30	LA-SF	1	30.00	254	478	.158	.71	1	12	7056	5621	2533710
30	LA-SAC	1	28.00*	244	-286	.074	.68	1	12	6326	5656	2533710
30	LA-SD	1	16.00*	388	-872	.009	.65	1	20	5748	5664	2533710
30	SF-SD	2	34.50	840	1511	.146	.70	4	40	26833	21499	10134840
30	SD-SAC	1	31.50	446	148	.113	.74	2	20	13008	10948	5067420
30	SF-SAC	1	13.00*	500	-949	.001	.69	1	24	6019	6011	2533710
	TOTAL	7	-	2672	30	.105	.70	10	128	64990	55399	25337100
40	LA-SF	1	25.50	1224	1546	.144	.70	4	44	28900	23151	11141038
40	LA-SAC	1	25.00	598	904	.150	.75	2	20	13843	10837	5570519
40	LA-SD	1	15.00	526	9	.106	.66	1	20	7306	6246	2785259
40	SF-SD	2	30.00	1758	2797	.145	.69	7	64	48833	38680	19496816
40	SD-SAC	1	27.00	598	641	.137	.75	2	20	14950	12207	5570519
40	SF-SAC	1	11.50*	698	-262	.079	.73	1	24	7432	6644	2785259
	TOTAL	7	-	5402	5635	.138	.71	17	192	121264	97765	47349410
50	LA-SF	3	22.50	3794	3072	.133	.68	10	112	79042	64534	30307708
50	LA-SAC	1	23.00	994	68	.107	.66	3	30	21169	17670	9092312
50	LA-SD	1	14.00	666	668	.166	.67	1	20	8633	6822	3030771
50	SF-SD	2	25.50	2932	1234	.118	.67	9	88	69228	57703	27276937
50	SD-SAC	1	26.00	648	1064	.154	.72	2	18	15600	12249	6061542
50	SF-SAC	1	10.00*	900	-82	.098	.75	1	24	8333	7271	3030771
	TOTAL	9	-	9934	6024	.126	.68	26	292	202005	166249	78800041
60	LA-SF	6	20.50	7218	4007	.125	.68	17	176	137008	112025	55595982
60	LA-SAC	1	19.00	1938	1098	.128	.73	4	44	34094	28060	13081408
60	LA-SD	1	11.50	1694	1277	.159	.74	2	38	18038	14293	6540704
60	SF-SD	3	23.50	3458	3602	.139	.69	9	84	75244	60537	29433167
60	SD-SAC	1	22.00	796	356	.120	.74	2	18	16215	13391	6540704
60	SF-SAC	1	9.00*	1028	-496	.063	.71	1	24	8567	7829	3270352
	TOTAL	13	-	16132	9844	.129	.70	35	384	289166	236155	114462317

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-9. California Corridor City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
70	LA-SF	6	20.50	7112	2873	.119	.63	16	162	134996	110970	56065749
70	LA-SAC	1	19.00	1936	2014	.145	.73	4	38	34059	26757	14016437
70	LA-SD	1	11.00	1986	2194	.192	.75	2	38	20228	15390	7008219
70	SF-SD	3	22.50	3700	286	.108	.63	9	84	77083	64898	31536984
70	SD-SAC	1	28.00	514	4077	.429	.73	1	10	13326	7927	3504109
70	SF-SAC	1	8.00*	1248	-533	.063	.74	1	24	9244	8455	3504109
	TOTAL	13	-	16496	10911	.131	.66	33	356	288936	234397	115635607
80	LA-SF	8	18.50	10820	5026	.123	.66	21	204	185343	150746	78375112
80	LA-SAC	1	18.00	2212	2513	.152	.73	4	38	36867	28721	14928593
80	LA-SD	1	10.50	2164	1856	.174	.71	2	38	21039	16367	7464296
80	SF-SD	2	19.50	4234	321	.108	.72	9	74	76447	63453	33589334
80	SD-SAC	1	27.00	560	4115	.412	.70	1	10	14000	8477	3732148
80	SF-SAC	1	7.50*	1370	-886	.039	.71	1	24	9514	8992	3732148
	TOTAL	14	-	21360	12945	.130	.69	38	388	343210	276756	141821631
90	LA-SF	8	18.50	10736	15836	.167	.66	18	180	183904	141211	71182303
90	LA-SAC	1	17.00	2474	2333	.146	.72	4	38	38943	30642	15818290
90	LA-SD	1	10.00	2528	2921	.208	.74	2	38	23407	17502	7909145
90	SF-SD	3	19.50	4218	5143	.150	.73	8	64	76158	59079	31636579
90	SD-SAC	1	25.00	652	4500	.422	.72	1	10	15093	9101	3954572
90	SF-SAC	1	7.50*	1324	-504	.070	.74	1	20	9194	8206	3954572
	TOTAL	15	-	21932	30229	.168	.69	34	350	346699	265741	134455461
100	LA-SF	8	17.50	12622	17498	.166	.67	19	188	204523	157121	79258204
100	LA-SAC	1	16.00	2714	1405	.128	.71	4	38	40207	32507	16685938
100	LA-SD	1	10.50	2084	2051	.173	.69	2	30	20261	15063	8342969
100	SF-SD	3	19.50	4220	1563	.118	.66	8	64	76194	62040	33371875
100	SD-SAC	1	23.00	718	4044	.375	.72	1	10	15291	9673	4171484
100	SF-SAC	1	7.50*	1338	-860	.048	.67	1	20	9292	8578	4171484
	TOTAL	15	-	23696	25701	.154	.68	35	350	365768	284982	146001954

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-9. California Corridor City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
110	LA-SF	8	16.50	14516	6233	.124	.64	21	206	221772	180811	92042692
110	LA-SAC	1	17.00	2452	6551	.244	.74	3	30	38596	27084	13148956
110	LA-SD	1	10.00	2422	3107	.204	.73	2	30	22426	16012	8765971
110	SF-SD	3	20.50	4060	6628	.165	.64	7	58	77065	58861	30680897
110	SD-SAC	1	23.00	660	3883	.352	.75	1	8	14056	8519	4382985
110	SF-SAC	1	6.50*	1598	-1186	.030	.73	1	20	9618	9150	4382985
	TOTAL	15	-	25708	25216	.151	.66	35	352	383533	300437	153404486
120	LA-SF	8	15.50	16386	7480	.127	.66	21	206	235169	191328	96372672
120	LA-SAC	1	16.00	2692	6099	.228	.75	3	30	39881	28588	13767525
120	LA-SD	1	10.00	2432	2409	.178	.68	2	30	22519	16646	9178350
120	SF-SD	2	18.00	4436	2806	.129	.68	7	54	73933	59007	32124224
120	SD-SAC	1	21.00	718	3241	.302	.75	1	8	13961	8989	4589175
120	SF-SAC	1	6.00*	1790	-1446	.017	.75	1	20	9944	9659	4589175
	TOTAL	14	-	28454	20589	.141	.68	35	348	395407	314217	160621121
121	LA-SF	8	16.50	14378	13996	.152	.67	18	178	219664	174363	82971099
121	LA-SAC	1	16.00	2692	4612	.198	.74	3	30	39881	30052	13828516
121	LA-SD	1	10.00	2432	1727	.157	.67	2	30	22519	17313	9219011
121	SF-SD	2	19.50	4198	9973	.205	.72	6	48	75797	55390	27657033
121	SD-SAC	1	21.00	720	2804	.274	.74	1	8	14000	9456	4609505
121	SF-SAC	1	6.00*	1790	-1803	-.004	.74	1	20	9944	10008	4609505
	TOTAL	14	-	26210	31309	.166	.69	31	314	381805	296582	142894669
130	LA-SF	8	16.50	14364	16065	.160	.65	17	170	219450	172661	81432570
130	LA-SAC	1	15.00	2880	3230	.168	.74	3	30	40000	31348	14370453
130	LA-SD	1	9.50	2770	2572	.180	.71	2	30	24366	18179	9580302
130	SF-SD	2	18.00	4408	4963	.153	.71	6	48	73467	57660	28740907
130	SD-SAC	1	19.00	778	1996	.221	.75	1	8	13687	9884	4790151
130	SF-SAC	1	6.00*	1804	-2112	-.018	.69	1	20	10022	10327	4790151
	TOTAL	14	-	27004	26714	.157	.68	30	306	380992	300059	143704534

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-9. California Corridor City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
140	LA-SF	8	15.50	16190	15395	.153	.68	18	170	232356	183099	89748198
140	LA-SAC	1	15.00	2888	1994	.142	.69	3	30	40111	32473	14958033
140	LA-SD	1	9.00	3106	3026	.189	.74	2	30	25883	19095	9972022
140	SF-SD	2	18.00	4410	2450	.128	.66	6	48	73500	59763	29916066
140	SD-SAC	1	16.50	840	602	.139	.75	1	8	12833	10350	4986011
140	SF-SAC	1	6.00*	1810	-2493	-.034	.65	1	20	10056	10668	4986011
	TOTAL	12	-	29006	23266	.147	.69	31	298	391324	309740	154566341
150	LA-SF	6	14.50	17510	2772	.113	.68	19	172	235088	195205	98360141
150	LA-SAC	1	15.00	2890	705	.118	.64	3	30	40139	33574	15530549
150	LA-SD	1	9.00	3132	2481	.172	.70	2	30	26100	19713	10353699
150	SF-SD	2	18.00	4402	9057	.202	.70	5	42	73367	54544	25884248
150	SD-SAC	1	16.50	856	393	.126	.71	1	8	13078	10732	5176850
150	SF-SAC	1	6.00*	1810	-2895	-.051	.60	1	20	10056	10998	5176850
	TOTAL	12	-	30600	12513	.127	.68	31	302	397828	324766	160482337
160	LA-SF	6	14.50	17474	6684	.124	.67	18	162	234605	191501	96529688
160	LA-SAC	1	15.00	2856	4070	.175	.74	3	24	39667	29527	16088281
160	LA-SD	1	8.50	3464	2612	.173	.72	2	30	27263	20604	10725521
160	SF-SD	2	16.50	4608	3621	.143	.69	5	42	70400	56662	26813802
160	SD-SAC	1	18.00	818	596	.136	.64	1	8	13633	11014	5362760
160	SF-SAC	1	6.00*	1756	-2729	-.037	.61	1	18	9756	10461	5362760
	TOTAL	12	-	30976	14854	.131	.68	30	284	395324	319769	160882812
170	LA-SF	6	14.50	17478	1405	.109	.64	18	160	234658	195603	99789045
170	LA-SAC	1	15.00	2862	3053	.156	.70	3	24	39750	30422	16631507
170	LA-SD	1	8.50	3484	2040	.156	.68	2	30	27420	21197	11087672
170	SF-SD	2	16.50	4612	1589	.121	.65	5	42	70461	58414	27719179
170	SD-SAC	1	18.00	818	184	.114	.60	1	8	13633	11357	5543836
170	SF-SAC	1	6.00*	1764	-3052	-.048	.58	1	18	9800	10760	5543836
	TOTAL	12	-	31018	5219	.114	.65	30	282	395722	327753	166315075

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-9. California Corridor City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
180	LA-SF	3	13.50	18106	2953	.113	.69	17	146	226325	186683	97242825
180	LA-SAC	1	13.50	3148	1153	.124	.73	3	24	39350	31722	17160498
180	LA-SD	1	8.00	4006	3112	.181	.74	2	30	29674	22245	11440332
180	SF-SD	2	18.00	4406	2856	.133	.58	5	42	73433	59786	28600831
180	SD-SAC	1	20.00	762	354	.122	.53	1	8	14111	11599	5720166
180	SF-SAC	1	6.00*	1766	-3396	-.060	.55	1	18	9811	11049	5720166
	TOTAL	9	-	32194	7032	.117	.67	29	268	392704	323084	165884818
190	LA-SF	6	15.50	15800	6748	.125	.59	16	142	226759	184444	942694[illegible]5
190	LA-SAC	1	13.50	3154	165	.108	.69	3	24	39425	32591	17675521
190	LA-SD	1	8.00	4034	2609	.167	.71	2	30	29881	22827	11783681
190	SF-SD	2	18.00	4406	835	.113	.55	5	42	73433	61484	29459201
190	SD-SAC	1	21.00	734	165	.113	.48	1	8	14272	11884	5891840
190	SF-SAC	1	6.00*	1766	-3743	-.072	.52	1	18	9811	11331	5891840
	TOTAL	12	-	29894	6779	.116	.60	28	264	393581	324561	164971528
200	LA-SF	3	14.50	16422	8918	.132	.62	15	132	220481	177272	90884181
200	LA-SAC	1	16.00	2676	61	.106	.56	3	24	39644	32725	18176836
200	LA-SD	1	8.00	4044	2002	.151	.67	2	30	29956	23382	12117891
200	SF-SD	1	16.50	4374	8973	.208	.73	4	30	66825	48708	24235782
200	SD-SAC	1	22.00	714	79	.109	.45	1	8	14544	12180	6058945
200	SF-SAC	1	6.00*	1766	-4083	-.083	.49	1	18	9811	11608	6058945
	TOTAL	8	-	29996	15950	.133	.62	26	242	381261	305875	157532580

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-10. California Corridor Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	AVERAGE FARE CENTS PER MILE	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	7	8.44	2672	10.5	70	10	128	65	55	25
40	7	7.30	5402	13.8	71	17	192	121	98	47
50	9	6.40	9934	12.6	68	26	292	202	166	79
60	13	5.82	16132	12.9	70	35	384	289	236	114
70	13	5.83	16496	13.1	66	33	356	289	234	116
80	14	5.30	21360	13.0	69	38	388	343	277	142
90	15	5.25	21932	16.8	69	34	350	347	266	134
100	15	5.03	23696	15.4	68	35	350	366	285	146
110	15	4.96	25708	15.1	66	35	352	384	300	153
120	14	4.60	28454	14.1	68	35	348	395	314	161
121	14	4.85	26210	16.6	69	31	314	382	297	143
130	14	4.72	27004	15.7	68	30	306	381	300	144
140	12	4.53	29006	14.7	69	31	298	391	310	155
150	12	4.34	30600	12.7	68	31	302	398	325	160
160	12	4.28	30976	13.1	68	30	284	395	320	161
170	12	4.28	31018	11.4	65	30	282	396	328	166
180	9	4.16	32194	11.7	67	29	268	393	323	166
190	14	4.34	31606	10.9	61	29	272	402	335	171
200	8	4.35	29996	13.3	62	26	242	381	306	158

* BEST CASE FOR EACH AIRCRAFT CAPACITY SATISFYING ALL OPTIMIZATION CONSTRAINTS

Table G-11. California Corridor Los Angeles - San Francisco City-Pair, Externally Blown Flap Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
50	1	27.00	1844	4333	.169	.64	5	58	46100	34652	18859643
50	3	24.50	4374	4809	.137	.66	11	132	99225	78761	41491215
50	6	24.50	4868	1806	.116	.63	12	154	110431	91548	45263143
50	8	22.50*	7384	-4441	.087	.66	18	224	153833	132658	67894715
50	10	25.50*	3950	-9164	.044	.52	11	152	93264	86773	41491215
60	1	25.50	2474	13214	.289	.71	5	58	58414	37668	19964734
60	3	23.50	5092	12476	.184	.67	11	126	110798	81750	43922414
60	6	22.50	7032	8748	.146	.66	15	178	146500	115154	59894201
60	8	21.50	9018	6623	.129	.67	19	224	179525	144278	75865988
60	10	21.50	8982	5663	.127	.65	18	230	178808	146028	71873042
61	1	25.50	2476	13008	.285	.70	5	58	58461	37879	20075266
61	3	23.50	5094	11970	.180	.66	11	126	110842	82208	44165585
61	6	22.50	7034	8020	.142	.65	15	178	146542	115799	60225797
61	8	21.50	9006	11040	.148	.68	18	218	179286	140979	72270956
61	10	21.50	8984	4736	.123	.64	18	230	178848	146845	72270956
70	1	24.50	3002	19622	.364	.74	5	58	68101	40530	21070200
70	3	22.50	6256	15119	.188	.64	12	140	130333	96135	50568480
70	6	20.50	10046	5044	.123	.64	19	226	190688	155434	80066760
70	8	20.50	10412	13076	.150	.66	19	224	197635	154350	80066760
70	10	20.50	10544	7336	.130	.63	19	240	200141	162596	80066760
80	1	24.50	3002	17126	.320	.65	5	58	68101	42608	22175908
80	3	21.50	7634	17833	.191	.62	13	154	151973	112386	57657360
80	6	19.50	11630	12317	.146	.64	19	226	209986	165875	84268450
80	8	19.50	12038	21835	.177	.68	19	222	217353	163724	84268450
80	10	19.50	12186	9433	.135	.62	20	244	220025	177124	88703632

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-11. California Corridor Los Angeles - San Francisco City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
90	1	23.50	3574	23453	.386	.68	5	58	77768	45529	23281725
90	3	20.50	8880	19612	.189	.62	14	160	168556	124348	65188830
90	6	18.50	13366	7956	.129	.62	20	240	228955	185862	93126901
90	8	18.50	13942	9082	.131	.62	21	250	238821	192845	97783246
90	10	18.50	14006	7371	.126	.61	21	254	239918	195654	97783246
100	1	22.50	4276	31243	.462	.74	5	58	89083	48639	24387520
100	3	19.50	10474	30931	.231	.65	14	160	189114	132419	68285056
100	6	17.50	15120	9341	.130	.64	21	238	245000	197013	102427584
100	8	16.50	17134	9891	.131	.67	22	256	261769	211393	107305088
100	10	17.50	15652	1015	.108	.60	22	260	253620	212120	107305088
110	1	22.50	4280	28834	.420	.67	5	58	89167	50714	25493161
110	3	19.50	10474	24047	.199	.60	14	160	189114	138135	71380852
110	6	16.50	16808	13429	.140	.66	21	230	256789	202962	107071278
110	8	15.50	18626	2343	.111	.66	22	256	267318	222653	112169910
110	10	17.50	15638	2070	.110	.58	21	246	253394	210925	107071278
120	1	21.50	5096	37426	.497	.73	5	58	101448	53986	26598520
120	3	18.50	12002	31402	.222	.63	14	160	205590	146088	74475855
120	6	15.50	18280	17193	.150	.69	20	220	262352	205017	106394078
120	8	15.50	18578	11614	.134	.67	21	230	266629	212865	111713782
120	10	16.50	17112	1650	.109	.59	21	240	261433	217634	111713782
121	1	21.50	5096	35144	.471	.73	5	58	101448	56227	26709035
121	3	18.50	12002	25107	.198	.62	14	160	205590	152266	74785298
121	6	15.50	18280	8503	.127	.69	20	220	262352	213539	106836140
121	8	15.50	18578	2578	.111	.67	21	230	266629	221727	112177947
121	10	17.50	15518	10552	.134	.60	19	214	251449	202603	101494333

Table G-11. California Corridor Los Angeles - San Francisco City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
130	1	21.50	5096	32912	.436	.68	5	58	101448	58083	27703466
130	3	17.50	13848	35023	.231	.67	14	160	224389	160099	77569704
130	6	16.50	16766	3918	.115	.60	19	214	256147	212510	105273170
130	8	16.50	17030	5264	.119	.60	19	218	260181	215197	105273170
130	10	16.50	17030	8794	.128	.61	19	214	260181	211667	105273170
140	1	20.50	6054	42486	.515	.75	5	58	114914	61559	28807872
140	3	17.50	13846	43059	.265	.68	13	146	224356	153038	74900468
140	6	16.50	16700	7778	.126	.60	18	200	255139	208232	103708340
140	8	17.50	15368	18084	.156	.58	17	188	249019	193979	97946765
140	10	14.50	19876	3563	.114	.67	19	212	266854	221988	109469914
150	1	20.50	6054	36082	.385	.70	6	58	114914	65289	35893934
150	3	16.50	15686	30912	.201	.65	15	160	239647	174878	89734835
150	6	15.50	18264	825	.107	.61	19	200	262122	218412	113664125
150	8	15.50	18504	6813	.123	.61	18	202	265538	218097	107681802
150	10	16.50	16924	1300	.108	.55	18	204	258561	216633	107681802
160	1	20.50	6054	33469	.355	.65	6	58	114914	67402	37217471
160	3	15.50	17290	45214	.250	.74	14	146	248144	170165	86840765
160	6	15.50	18226	26409	.179	.66	16	172	261577	197722	99246589
160	8	15.50	18492	13696	.141	.61	17	188	265394	211913	105449501
160	10	17.50	15066	6759	.124	.52	16	182	244125	199920	99246589
170	1	19.50	7336	46507	.441	.74	6	58	132456	71407	38539907
170	3	14.50	18788	25108	.178	.69	15	160	252246	190785	96349768
170	6	15.50	18204	25410	.174	.65	16	164	261261	197075	102773085
170	8	14.50	19854	2232	.110	.63	18	186	266558	220704	115619721
170	10	17.50	14530	47251	.276	.63	12	136	235440	159107	77079814

Table G-11. California Corridor Los Angeles - San Francisco City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
180	1	19.50	7336	43902	.412	.70	6	58	132456	73514	39861095
180	3	13.50	20158	11559	.135	.70	16	160	251975	200310	106296253
180	6	14.50	19530	17162	.150	.66	16	164	262208	204940	106296253
180	8	14.50	19830	6914	.122	.63	17	176	266236	216710	112939768
180	10	16.50	16560	10368	.132	.55	16	168	253000	202527	106296253
190	1	19.50	7336	41302	.384	.67	6	58	132456	75616	41180887
190	3	13.50	20160	22	.105	.66	17	160	252000	207955	116679180
190	6	14.50	19536	9996	.130	.63	16	164	262289	210860	109815699
190	8	15.50	18378	2332	.111	.56	17	172	263758	217404	116679180
190	10	16.50	16336	37421	.222	.61	13	142	249578	178492	89225255
200	1	18.50	8626	52103	.446	.74	6	58	147760	79622	42499139
200	3	13.50	20160	14745	.144	.69	15	146	252000	197168	106247847
200	6	13.50	20734	3597	.114	.66	16	158	259175	212818	113331037
200	8	16.50	16540	25486	.177	.57	14	146	252694	189794	99164657
200	10	15.50	18232	16791	.149	.58	15	158	261663	204785	106247847

Table G-12. California Corridor Los Angeles - San Francisco Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	6	24.50	4868	11.6	63	12	154	110	92	45
60	8	21.50	9018	12.9	67	19	224	180	144	76
61	8	21.50	9006	14.8	68	18	218	179	141	72
70	10	20.50	10544	13.0	63	19	240	200	163	80
80	10	19.50	12186	13.5	62	20	244	220	177	89
90	10	18.50	14006	12.6	61	21	254	240	196	98
100	8	16.50	17134	13.1	67	22	256	262	211	107
110	8	15.50	18626	11.1	66	22	256	267	223	112
120	8	15.50	18578	13.4	67	21	230	267	213	112
121	8	15.50	18578	11.1	67	21	230	267	222	112
130	8	16.50	17030	11.9	60	19	218	260	215	105
140	10	14.50	19876	11.4	67	19	212	267	222	109
150	8	15.50	18504	12.3	61	18	202	266	218	108
160	8	15.50	18492	14.1	61	17	188	265	212	105
170	8	14.50	19854	11.0	63	18	186	267	221	116
180	3	13,50	20158	13.5	70	16	160	252	200	106
190	3	13.50	20160	10.5	66	17	160	252	208	117
200	6	13.50	20734	11.4	66	16	158	259	213	113

Table G-13. California Corridor San Diego - San Francisco City-Pair, Externally Blown Flap Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
50	1	30.00	1898	6045	.194	.65	5.00	58	52722	39561	18859643
50	2	27.50	2878	2122	.125	.65	8.00	88	73282	59775	30175429
50	3	27.50	2882	3328	.136	.67	8.00	86	73384	58671	30175429
60	1	27.50	2446	9175	.212	.70	6.00	58	62282	44068	23957681
60	2	24.50	3584	1974	.120	.68	9.00	88	81304	65771	35936521
60	3	24.50	3610	6335	.160	.70	8.00	86	81894	63506	31943574
61	1	27.50	2446	8875	.208	.69	6.00	58	62282	44318	24090319
61	2	24.50	3586	1567	.117	.67	9.00	88	81349	66148	36135478
61	3	24.50	3610	5909	.156	.69	8.00	86	81894	63866	32120425
70	1	25.50	2912	11845	.235	.72	6.00	58	68756	47371	25284240
70	2	24.50	3586	11584	.214	.69	7.00	74	81349	58635	29498280
70	3	21.50	4154	1954	.121	.69	8.00	86	82695	68022	33712320
80	1	23.50	3350	12231	.233	.72	6.00	58	72894	50622	26611089
80	2	20.50	4270	6452	.163	.72	7.00	74	81051	62885	31046271
80	3	24.50	3604	9629	.191	.63	7.00	72	81757	60415	31046271
90	1	21.50	3766	10599	.211	.72	6.00	58	74971	53832	27938070
90	2	19.50	4410	1118	.115	.66	7.00	74	79625	66209	32594415
90	3	21.50	4154	6040	.157	.64	7.00	72	82695	64357	32594415
100	1	19.50	4114	6319	.165	.71	6.00	58	74281	56920	29265024
100	2	21.50	4130	518	.109	.56	7.00	74	82218	68818	34142528
100	3	20.50	4304	1198	.115	.60	7.00	72	81696	67616	34142528
110	1	18.00	4378	1565	.119	.69	6.00	58	72967	59859	30591794
110	2	20.50	4272	11	.105	.57	7.00	68	81089	67612	35690426
110	3	20.50	4294	8026	.178	.63	6.00	62	81506	61938	30591794

Table G-13. California Corridor San Diego - San Francisco City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
120	1	19.50	4114	356	.108	.59	6.00	58	74281	61882	31918224
120	2	19.50	4402	15640	.269	.73	5.00	50	79481	53805	26598520
120	3	18.00	4648	296	.108	.62	6.00	62	77467	65128	31918224
121	1	20.50	3932	13471	.245	.74	5.00	44	74635	51087	26709035
121	2	19.50	4404	13325	.244	.73	5.00	50	79517	56114	26709035
121	3	19.50	4430	272	.107	.59	6.00	62	79986	67622	32050842
130	1	19.50	4114	10711	.213	.72	5.00	44	74281	53117	27703466
130	2	16.50	4820	4484	.150	.74	5.00	50	73639	58702	27703466
130	3	20.50	4282	767	.111	.55	6.00	60	81279	67969	33244159
140	1	18.00	4378	6622	.169	.71	5.00	44	72967	55475	28807872
140	2	16.50	4822	2008	.124	.69	5.00	50	73669	60793	28807872
140	3	19.50	4404	8632	.188	.63	5.00	50	79517	60016	28807872
150	1	16.50	4628	1613	.120	.70	5.00	44	70706	57807	29911612
150	2	18.00	4604	2942	.132	.61	5.00	50	76733	62506	29911612
150	3	18.00	4622	3281	.136	.62	5.00	50	77033	62467	29911612
160	1	18.00	4378	1994	.123	.62	5.00	44	72967	59271	31014559
160	2	18.00	4604	446	.109	.58	5.00	50	76733	64586	31014559
160	3	18.00	4622	788	.112	.58	5.00	50	77033	64544	31014559
170	1	15.00	4844	3495	.143	.75	4.00	38	67278	54089	25693271
170	2	19.50	4404	1077	.114	.52	5.00	50	79517	66322	32116589
170	3	19.50	4406	1184	.115	.52	5.00	50	79553	66251	32116589
180	1	15.00	4844	1549	.121	.71	4.00	38	67278	55702	26574063
180	2	19.50	4396	13322	.245	.61	4.00	40	79372	56024	26574063
180	3	20.50	4276	531	.109	.48	5.00	50	81165	68101	33217579

Table G-13. California Corridor San Diego - San Francisco City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
190	1	19.50	4100	16331	.271	.72	4.00	30	74028	47339	27453925
190	2	19.50	4400	2554	.126	.53	5.00	44	79444	63942	34317406
190	3	20.50	4272	152	.106	.47	5.00	48	81089	67989	34317406
200	1	18.00	4374	13078	.233	.73	4.00	30	72900	49132	28332759
200	2	19.50	4400	289	.107	.50	5.00	44	79444	65793	35415949
200	3	21.50	4000	12139	.224	.53	4.00	38	79630	56801	28332759

Table G-14. California Corridor San Diego - San Francisco Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	3	27.50	2882	13.6	67	8	86	73	59	30
60	3	24.50	3610	16.0	70	8	86	82	64	32
61	3	24.50	3610	15.6	69	8	86	82	64	32
70	3	21.50	4154	12.1	69	8	86	83	68	34
80	2	20.50	4270	16.3	72	7	74	81	63	31
90	2	19.50	4410	11.5	66	7	74	80	66	33
100	3	20.50	4304	11.5	60	7	72	82	68	34
110	1	18.00	4378	11.9	69	6	58	73	60	31
120	3	18.00	4648	10.8	62	6	62	77	65	32
121	3	19.50	4430	10.7	59	6	62	80	68	32
130	2	16.50	4820	15.0	74	5	50	74	59	28
140	2	16.50	4822	12.4	69	5	50	74	61	29
150	1	16.50	4628	12.0	70	5	44	71	58	30
160	3	18.00	4622	11.2	58	5	50	77	65	31
170	1	15.00	4844	14.3	75	4	38	67	54	26
180	1	15.00	4844	12.1	71	4	38	67	56	27
190	2	19.50	4400	12.6	53	5	44	79	64	34
200	2	19.50	4400	10.7	50	5	44	79	66	35

Table G-15. California Corridor Los Angeles - Sacramento Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	1	22.00	1644	11.8	75	4	44	33	27	15
60	1	21.00	1882	13.1	71	4	44	37	29	16
61	1	21.00	1886	12.9	70	4	44	37	29	16
70	1	20.00	2140	14.1	69	4	44	40	31	17
80	1	18.00	2632	16.4	75	4	44	44	33	18
90	1	17.00	2836	13.9	72	4	44	45	35	19
100	1	16.00	3008	10.5	68	4	44	45	37	20
110	1	19.00	2372	26.2	72	3	30	42	27	15
120	1	18.00	2602	25.5	72	3	30	43	29	16
121	1	18.00	2602	23.3	72	3	30	43	30	16
130	1	17.00	2814	21.8	72	3	30	44	31	17
140	1	16.00	3002	19.1	71	3	30	44	33	17
150	1	15.00	3178	15.7	71	3	30	44	34	18
160	1	13.50	3414	10.8	71	3	30	43	35	19
170	1	15.00	3180	11.5	62	3	30	44	36	19
180	1	17.00	2818	10.6	52	3	30	44	37	20
190	1	17.00	2770	34.5	73	2	20	44	27	14
200	1	16.00	2964	32.1	74	2	20	44	28	14

Table G-16. California Corridor Los Angeles - San Diego Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	1	15.00	776	17.3	65	1	24	11	8	4
60	1	12.00	1966	16.9	74	2	44	22	17	8
61	1	12.00	1972	16.7	73	2	44	22	17	8
70	1	11.50	2248	19.3	73	2	44	24	18	8
80	1	11.00	2458	18.5	70	2	44	25	19	9
90	1	10.50	2822	21.3	71	2	44	27	20	9
100	1	9.00	4132	10.8	71	3	58	34	29	15
110	1	10.00	3060	22.9	73	2	38	28	20	10
120	1	10.00	3062	20.0	67	2	38	28	21	11
121	1	10.00	3062	18.1	67	2	38	28	21	11
130	1	9.50	3476	20.4	70	2	38	31	22	11
140	1	9.00	3922	22.0	74	2	38	33	24	12
150	1	8.00	4946	10.8	75	3	44	37	30	18
160	1	9.50	3350	19.5	70	2	30	29	21	12
170	1	9.00	3760	20.8	74	2	30	31	22	13
180	1	9.00	3780	19.1	70	2	30	32	22	13
190	1	8.50	4198	19.6	74	2	30	33	23	14
200	1	8.50	4216	18.1	70	2	30	33	24	14

Table G-17. California Corridor San Diego - Sacramento Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	1	33.00	444	38.9	74	1	12	14	8	4
60	1	30.00	534	40.9	74	1	12	15	9	4
61	1	30.00	534	40.3	73	1	12	15	9	4
70	1	28.00	616	42.0	73	1	12	16	10	4
80	1	25.00	720	39.9	75	1	12	17	10	4
90	1	23.00	802	36.6	74	1	12	17	11	5
100	1	19.00	894	23.5	74	1	12	16	12	5
110	1	16.50	988	15.3	75	1	12	15	12	5
120	1	19.00	884	23.8	74	1	10	16	11	5
121	1	19.00	884	21.2	73	1	10	16	11	5
130	1	16.50	960	13.4	74	1	10	15	12	6
140	1	16.50	962	10.9	69	1	10	15	12	6
150	1	18.00	934	12.8	62	1	10	16	13	6
160	1	19.00	888	11.1	55	1	10	16	13	6
170	1	20.00	884	12.1	52	1	10	16	14	6
180	1	21.00	848	10.7	47	1	10	16	14	7
190	1	23.00	792	10.5	42	1	10	17	14	7
200	1	23.00*	792	08.6	40	1	10	17	15	7

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-18. California Corridor San Francisco - Sacramento Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	1	9.50*	1104	02.3	74	1	30	10	9	4
60	1	9.50*	1046	06.5	73	1	24	9	8	4
61	1	9.50*	1048	06.3	72	1	24	9	8	4
70	1	9.00*	1162	06.0	69	1	24	10	8	4
80	1	8.50*	1280	05.1	67	1	24	10	9	4
90	1	8.50*	1280	02.4	59	1	24	10	10	5
100	1	7.00*	1684	02.9	70	1	24	11	10	5
110	1	7.00*	1690	00.8	64	1	24	11	11	5
120	1	7.00*	1618	03.8	67	1	20	10	10	5
121	1	7.00*	1618	02.2	67	1	20	10	10	5
130	1	7.00*	1626	00.9	63	1	20	10	10	6
140	1	7.00*	1626	-00.8	58	1	20	11	11	6
150	1	6.00*	1952	-02.2	65	1	20	11	11	6
160	1	6.00*	1956	-03.6	61	1	20	11	12	6
170	1	6.00*	1956	-04.9	58	1	20	11	12	6
180	1	6.00*	1956	-06.2	54	1	20	11	12	7
190	1	6.00*	1874	-05.2	55	1	18	10	12	7
200	1	6.00*	1874	-06.2	52	1	18	10	12	7

* NO FARE PRODUCED FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-19. California Corridor City-Pair Summary, Externally Blown Flap Concept

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
50	LA-SF	6	24.50	4868	1806	.116	.63	12	154	110431	91548	45263143
50	LA-SAC	1	22.00	1644	681	.118	.75	4	44	33489	27116	15087714
50	LA-SD	1	15.00	776	917	.173	.65	1	24	10778	8438	3771929
50	SF-SD	3	27.50	2882	3328	.136	.67	8	86	73384	58671	30175429
50	SD-SAC	1	33.00	444	3843	.389	.74	1	12	13567	8301	3771929
50	SF-SAC	1	9.50*	1104	-1116	.023	.74	1	30	9711	9404	3771929
	TOTAL	13	-	11718	9459	.131	.67	27	350	251360	203478	101842073
60	LA-SF	8	21.50	9018	6623	.129	.67	19	224	179525	144278	75865988
60	LA-SAC	1	21.00	1882	1485	.131	.71	4	44	36594	29083	15971787
60	LA-SD	1	12.00	1966	1838	.169	.74	2	44	21844	16993	7985894
60	SF-SD	3	24.50	3610	6335	.160	.70	8	86	81894	63506	31943574
60	SD-SAC	1	30.00	534	4362	.409	.74	1	12	14833	8965	3992947
60	SF-SAC	1	9.50*	1046	-577	.065	.73	1	24	9201	8272	3992947
	TOTAL	15	-	18056	20066	.144	.69	35	434	343891	271097	140663137
61	LA-SF	8	21.50	9006	11040	.148	.68	18	218	179286	140979	72270956
61	LA-SAC	1	21.00	1886	1362	.129	.70	4	44	36672	29250	16060213
61	LA-SD	1	12.00	1972	1798	.167	.73	2	44	21911	17083	8030106
61	SF-SD	3	24.50	3610	5909	.156	.69	8	86	81894	63866	32120425
61	SD-SAC	1	30.00	534	4303	.403	.73	1	12	14833	9016	4015053
61	SF-SAC	1	9.50*	1048	-610	.063	.72	1	24	9219	8313	4015053
	TOTAL	15	-	18056	23802	.154	.69	34	428	343815	268507	136511806
70	LA-SF	10	20.50	10544	7336	.130	.63	19	240	200141	162596	80066760
70	LA-SAC	1	20.00	2140	2191	.141	.69	4	44	39630	31079	16856160
70	LA-SD	1	11.50	2248	2659	.193	.73	2	44	23937	18098	8428080
70	SF-SD	3	21.50	4154	1954	.121	.69	8	86	82695	68022	33712320
70	SD-SAC	1	28.00	616	4766	.420	.73	1	12	15970	9615	4214040
70	SF-SAC	1	9.00*	1162	-675	.060	.69	1	24	9683	8769	4214040
	TOTAL	17	-	20864	18231	.139	.69	35	450	372056	298179	147491400

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-19. California Corridor City-Pair Summary, Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
80	LA-SF	10	19.50	12186	9433	.135	.62	20	244	220025	177124	88703632
80	LA-SAC	1	18.00	2632	3752	.164	.75	4	44	43867	33421	17740726
80	LA-SD	1	11.00	2458	2553	.185	.70	2	44	25035	19135	8870363
80	SF-SD	2	20.50	4270	6452	.163	.72	7	74	81051	62885	31046271
80	SD-SAC	1	25.00	720	4691	.399	.75	1	12	16667	10302	4435182
80	SF-SAC	1	8.50*	1280	-866	.051	.67	1	24	10074	9267	4435182
	TOTAL	16	-	23546	26015	.152	.66	35	442	396719	312134	155231356
90	LA-SF	10	18.50	14006	7371	.126	.61	21	254	239918	195654	97783246
90	LA-SAC	1	17.00	2836	2283	.139	.72	4	44	44641	35331	18625380
90	LA-SD	1	10.50	2822	3609	.213	.71	2	44	27436	20313	9312690
90	SF-SD	2	19.50	4410	1118	.115	.66	7	74	79625	66209	32594415
90	SD-SAC	1	23.00	802	4373	.366	.74	1	12	17080	10950	4656345
90	SF-SAC	1	8.50*	1280	-1347	.024	.59	1	24	10074	9665	4656345
	TOTAL	16	-	26156	17407	.134	.64	36	452	418774	338122	167628421
100	LA-SF	8	16.50	17134	9891	.131	.67	22	256	261769	211393	107305088
100	LA-SAC	1	16.00	3008	12	.105	.68	4	44	44563	37190	19510016
100	LA-SD	1	9.00	4132	151	.108	.71	3	58	34433	28762	14632512
100	SF-SD	3	20.50	4304	1198	.115	.60	7	72	81696	67616	34142528
100	SD-SAC	1	19.00	894	2273	.235	.74	1	12	15728	11615	4877504
100	SF-SAC	1	7.00*	1684	-1327	.029	.70	1	24	10915	10402	4877504
	TOTAL	15	-	31156	12198	.123	.67	38	466	449104	366978	185345162
110	LA-SF	8	15.50	18626	2343	.111	.66	22	256	267318	222653	112169910
110	LA-SAC	1	19.00	2372	8641	.262	.72	3	30	41730	27317	15295897
110	LA-SD	1	10.00	3060	4527	.229	.73	2	38	28333	19959	10197265
110	SF-SD	1	18.00	4378	1565	.119	.69	6	58	72967	59859	30591794
110	SD-SAC	1	16.50	988	888	.153	.75	1	12	15094	12282	5098632
110	SF-SAC	1	7.00*	1690	-1773	.008	.64	1	24	10954	10803	5098632
	TOTAL	13	-	31114	16191	.130	.68	35	418	436396	352873	178452130

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-19. California Corridor City-Pair Summary, Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
120	LA-SF	8	15.50	18578	11614	.134	.67	21	230	266629	212865	111713782
120	LA-SAC	1	18.00	2602	8578	.255	.72	3	30	43367	28767	15959112
120	LA-SD	1	10.00	3062	3638	.200	.67	2	38	28352	20700	10639408
120	SF-SD	3	18.00	4648	296	.108	.62	6	62	77467	65128	31918224
120	SD-SAC	1	19.00	884	2536	.238	.74	1	10	15552	11008	5319704
120	SF-SAC	1	7.00*	1618	-1278	.038	.67	1	20	10487	9757	5319704
	TOTAL	15	-	31392	25384	.144	.67	34	390	441874	348225	180869934
121	LA-SF	8	15.50	18578	2578	.111	.67	21	230	266629	221727	112177947
121	LA-SAC	1	18.00	2602	7375	.233	.72	3	30	43367	29946	16025421
121	LA-SD	1	10.00	3062	2925	.181	.67	2	38	28352	21396	10683614
121	SF-SD	3	19.50	4430	272	.107	.59	6	62	79986	67622	32050842
121	SD-SAC	1	19.00	884	2053	.212	.73	1	10	15552	11484	5341807
121	SF-SAC	1	7.00*	1618	-1585	.022	.67	1	20	10487	10056	5341807
	TOTAL	15	-	31174	13618	.126	.66	34	390	444373	362231	181621438
130	LA-SF	8	16.50	17030	5264	.119	.60	19	218	260181	215197	105273170
130	LA-SAC	1	17.00	2814	6767	.218	.72	3	30	44294	31256	16622079
130	LA-SD	1	9.50	3476	3951	.204	.70	2	38	30576	22444	11081386
130	SF-SD	2	16.50	4820	4484	.150	.74	5	50	73639	58702	27703466
130	SD-SAC	1	16.50	960	574	.134	.74	1	10	14667	12002	5540693
130	SF-SAC	1	7.00*	1626	-1920	.009	.63	1	20	10539	10369	5540693
	TOTAL	14	-	30726	19120	.136	.64	31	366	433896	349970	171761487
140	LA-SF	10	14.50	19876	3563	.114	.67	19	212	266854	221988	109469914
140	LA-SAC	1	16.00	3002	5313	.191	.71	3	30	44474	32639	17284723
140	LA-SD	1	9.00	3922	4742	.220	.74	2	38	32683	23594	11523149
140	SF-SD	2	16.50	4822	2008	.124	.69	5	50	73669	60793	28807872
140	SD-SAC	1	16.50	962	90	.109	.69	1	10	14697	12433	5761574
140	SF-SAC	1	7.00*	1626	-2343	-.008	.58	1	20	10539	10708	5761574
	TOTAL	16	-	34210	13373	.126	.68	31	360	442916	362155	178608806

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-19. California Corridor City-Pair Summary, Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
150	LA-SF	8	15.50	18504	6813	.123	.61	18	202	265538	218097	107681802
150	LA-SAC	1	15.00	3178	3364	.157	.71	3	30	44139	34003	17946967
150	LA-SD	1	8.00	4946	174	.108	.75	3	44	36637	29691	17946967
150	SF-SD	1	16.50	4628	1613	.120	.70	5	44	70706	57807	29911612
150	SD-SAC	1	18.00	934	498	.128	.62	1	10	15567	12812	5982322
150	SF-SAC	1	6.00*	1952	-2733	-.022	.65	1	20	10844	11320	5982322
	TOTAL	13	-	34142	9729	.120	.65	33	350	443431	363730	185451992
160	LA-SF	8	15.50	18492	13696	.141	.61	17	188	265394	211913	105449501
160	LA-SAC	1	13.50	3414	199	.108	.71	3	30	42675	35455	18608735
160	LA-SD	1	9.50	3350	4034	.195	.70	2	30	29468	20753	12405824
160	SF-SD	3	18.00	4622	788	.112	.58	5	50	77033	64544	31014559
160	SD-SAC	1	19.00	888	124	.111	.55	1	10	15622	13158	6202912
160	SF-SAC	1	6.00*	1956	-3135	-.036	.61	1	20	10867	11662	6202912
	TOTAL	15	-	32722	15706	.129	.62	29	328	441059	357485	179884443
170	LA-SF	8	14.50	19854	2232	.110	.63	18	186	266558	220704	115619721
170	LA-SAC	1	15.00	3180	694	.115	.62	3	30	44167	36202	19269954
170	LA-SD	1	9.00	3760	4749	.208	.74	2	30	31333	21737	12846636
170	SF-SD	1	15.00	4844	3495	.143	.75	4	38	67278	54089	25693271
170	SD-SAC	1	20.00	884	370	.121	.52	1	10	16370	13577	6423318
170	SF-SAC	1	6.00*	1956	-3556	-.049	.58	1	20	10867	11999	6423318
	TOTAL	13	-	34478	7984	.117	.65	29	314	436573	358308	186276218
180	LA-SF	3	13.50	20158	11559	.135	.70	16	160	251975	200310	106296253
180	LA-SAC	1	17.00	2818	82	.106	.52	3	30	44357	36756	19930547
180	LA-SD	1	9.00	3780	4128	.191	.70	2	30	31500	22359	13287032
180	SF-SD	1	15.00	4844	1549	.121	.71	4	38	67278	55702	26574063
180	SD-SAC	1	21.00	848	43	.107	.47	1	10	16489	13939	6643516
180	SF-SAC	1	6.00*	1956	-3975	-.062	.54	1	20	10867	12335	6643516
	TOTAL	8	-	34404	13386	.126	.67	27	288	422466	341401	179374927

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-19. California Corridor City-Pair Summary, Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
190	LA-SF	3	13.50	20160	22	.105	.66	17	160	252000	207955	116679180
190	LA-SAC	1	17.00	2770	11858	.345	.73	2	20	43602	26565	13726962
190	LA-SD	1	8.50	4198	4513	.196	.74	2	30	33040	23348	13726962
190	SF-SD	2	19.50	4400	2554	.126	.53	5	44	79444	63942	34317406
190	SD-SAC	1	23.00	792	12	.105	.42	1	10	16867	14265	6863481
190	SF-SAC	1	6.00*	1874	-3870	-.052	.55	1	18	10411	11692	6863481
	TOTAL	9	-	34194	15089	.127	.64	28	282	435364	347767	192177472
200	LA-SF	6	13.50	20734	3597	.114	.66	16	158	259175	212818	113331037
200	LA-SAC	1	16.00	2964	10984	.321	.74	2	20	43911	27582	14166380
200	LA-SD	1	8.50	4216	3871	.181	.70	2	30	33181	23965	14166380
200	SF-SD	2	19.50	4400	289	.107	.50	5	44	79444	65793	35415949
200	SD-SAC	1	23.00*	792	-495	.086	.40	1	10	16867	14689	7083190
200	SF-SAC	1	6.00*	1874	-4261	-.062	.52	1	18	10411	11999	7083190
	TOTAL	12	-	34980	13985	.125	.62	27	280	442989	356846	191246126

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-20. California Corridor Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	AVERAGE FARE CENTS PER MILE	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	13	6.95	11718	13.1	67	27	350	251	203	102
60	15	6.27	18056	14.4	69	35	434	344	271	141
61	15	6.27	18056	15.4	69	34	428	344	269	137
70	17	5.87	20864	13.9	69	35	450	372	298	147
80	16	5.55	23546	15.2	66	35	442	397	312	155
90	16	5.29	26156	13.4	64	36	452	419	338	168
100	15	4.92	31156	12.3	67	38	466	449	367	185
110	13	4.64	31114	13.0	68	35	418	436	353	178
120	15	4.66	31392	14.4	67	34	390	442	348	181
121	15	4.73	31174	12.6	66	34	390	444	362	182
130	14	4.72	30726	13.6	64	31	366	434	350	172
140	16	4.35	34210	12.6	68	31	360	443	362	179
150	13	4.47	34142	12.0	65	33	350	443	364	185
160	15	4.52	32722	12.9	62	29	328	441	357	180
170	13	4.24	34478	11.7	65	29	314	437	358	186
180	8	4.13	34404	12.6	67	27	288	422	341	179
190	9	4.36	34194	12.7	64	28	282	435	348	192
200	12	4.29	34980	12.5	62	27	280	443	357	191

* BEST CASE FOR EACH AIRCRAFT CAPACITY SATISFYING ALL OPTIMIZATION CONSTRAINTS

Table G-21. California Corridor Los Angeles - San Francisco City-Pair, Augmentor Wing Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
40	1	30.00	1048	662	.118	.60	4	44	29111	23190	13936929
40	3	25.50	3668	2730	.125	.69	11	132	86606	69415	38326556
40	6	28.50*	2384	-2026	.085	.56	8	106	62911	54420	27873859
40	8	24.50*	5110	-6670	.069	.64	15	200	115921	102872	52263485
40	10	27.00*	3234	-12428	.015	.51	11	158	80850	78817	38326556
50	1	27.00	1844	5996	.195	.64	5	58	46100	33107	18544840
50	3	24.50	4374	8579	.164	.66	11	132	99225	75252	40798647
50	6	24.50	4874	1301	.113	.61	13	160	110568	91074	48216583
50	8	22.50	7384	1908	.113	.66	18	224	153833	126736	66761422
50	10	22.50*	7310	-3073	.092	.63	18	232	152292	130175	66761422
60	1	25.50	2474	14842	.315	.71	5	58	58414	36151	19667592
60	3	23.50	5092	16033	.208	.67	11	126	110798	78440	43268703
60	6	21.50	8694	5484	.125	.64	19	226	173075	139393	74736850
60	8	21.50	9018	12899	.153	.67	19	224	179525	138428	74736850
60	10	21.50	8982	12026	.152	.65	18	230	178808	140068	70803332
61	1	25.50	2476	13591	.293	.70	5	58	58461	37291	20090073
61	3	23.50	5094	13245	.188	.66	11	126	110842	80921	44198161
61	6	21.50	8696	488	.107	.63	19	226	173115	143823	76342279
61	8	21.50	9020	7951	.134	.66	19	224	179565	142810	76342279
61	10	21.50	8984	7037	.132	.64	18	230	178848	144524	72324264
70	1	24.50	3002	20221	.372	.74	5	58	68101	39921	21095673
70	3	22.50	6256	16563	.196	.64	12	140	130333	94668	50629614
70	6	20.50	10046	7396	.131	.64	19	226	190688	153046	80163556
70	8	20.50	10412	15393	.158	.66	19	224	197635	151997	80163556
70	10	20.50	10544	9801	.139	.63	19	240	200141	160094	80163556

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-21. California Corridor Los Angeles - San Francisco City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
80	1	24.50	3002	17744	.327	.65	5	58	68101	41976	22213238
80	3	21.50	7634	19479	.199	.62	13	154	151973	110703	57754419
80	6	19.50	11630	14745	.154	.64	19	226	209986	163394	84410305
80	8	19.50	12038	24208	.185	.68	19	222	217353	161297	84410305
80	10	19.50	12186	12031	.143	.62	20	244	220025	174470	88852953
90	1	23.50	3574	24093	.392	.68	5	58	77768	44872	23331042
90	3	20.50	8880	21374	.196	.62	14	160	168556	122533	65326919
90	6	18.50	13366	10612	.137	.62	20	240	228955	183131	93324169
90	8	17.50	15636	2072	.110	.62	23	278	253361	210797	107322795
90	10	18.50	14006	10167	.134	.61	21	254	239918	192779	97990378
100	1	22.50	4276	31901	.468	.74	5	58	89083	47957	24449077
100	3	19.50	10474	32750	.238	.65	14	160	189114	130535	68457416
100	6	17.50	15120	12060	.138	.64	21	238	245000	194197	102686125
100	8	16.50	17134	12789	.138	.67	22	256	261769	208392	107575940
100	10	17.50	15652	3971	.115	.60	22	260	253620	209061	107575940
110	1	22.50	4280	29513	.426	.67	5	58	89167	50007	25567334
110	3	19.50	10474	25923	.206	.60	14	160	189114	136181	71588536
110	6	16.50	16808	16144	.147	.66	21	230	256789	200130	107382804
110	8	15.50	18626	5332	.118	.66	22	256	267318	219540	112496270
110	10	17.50	15638	4957	.118	.58	21	246	253394	207921	107382804
120	1	21.50	5096	38127	.503	.73	5	58	101448	53253	26685803
120	3	18.50	12002	33336	.229	.63	14	160	205590	144062	74720249
120	6	15.50	18280	19864	.157	.69	20	220	262352	202214	106743213
120	8	15.50	18578	14388	.141	.67	21	230	266629	209953	112080374
120	10	16.50	17112	4549	.116	.59	21	240	261433	214596	112080374

Table G-21. California Corridor Los Angeles - San Francisco City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
121	1	21.50	5096	35854	.477	.73	5	58	101448	55483	26797662
121	3	18.50	12002	27069	.205	.62	14	160	205590	150211	75033452
121	6	15.50	18280	11213	.134	.69	20	220	262352	210696	107190646
121	8	15.50	18578	5391	.118	.67	21	230	266629	218773	112550179
121	10	17.50	15518	13161	.141	.60	19	214	251449	199867	101831114
130	1	21.50	5096	33642	.442	.68	5	58	101448	57316	27804474
130	3	17.50	13848	37038	.237	.67	14	160	224389	157977	77852528
130	6	14.50	19612	1681	.109	.69	20	220	263309	219666	111217897
130	8	16.50	17054	561	.106	.59	20	224	260547	218024	111217897
130	10	16.50	17030	11473	.135	.61	19	214	260181	208844	105657003
140	1	20.50	6054	43237	.521	.75	5	58	114914	60764	28923336
140	3	17.50	13846	44940	.271	.68	13	146	224356	151044	75200673
140	6	15.50	18276	1408	.109	.61	19	214	262294	219418	109908676
140	8	17.50	15368	20511	.163	.58	17	188	249019	191404	98339342
140	10	14.50	19876	6296	.121	.67	19	212	266854	219089	109908676
150	1	20.50	6054	36851	.389	.70	6	58	114914	64461	36050850
150	3	16.50	15686	33015	.207	.65	15	160	239647	172627	90127126
150	6	15.50	18264	3488	.114	.61	19	200	262122	215562	114161027
150	8	15.50	18532	1473	.109	.59	19	208	265969	221423	114161027
150	10	16.50	16924	3988	.115	.55	18	204	258561	213767	108152551
160	1	20.50	6054	34258	.360	.65	6	58	114914	66548	37393896
160	3	15.50	17290	47194	.256	.74	14	146	248144	168029	87252424
160	6	15.50	18226	28776	.185	.66	16	172	261577	195177	99717056
160	8	15.50	18492	16257	.148	.61	17	188	265394	209163	105949372
160	10	17.50	15066	9232	.131	.52	16	182	244125	197270	99717056

Table G-21. California Corridor Los Angeles - San Francisco City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
170	1	19.50	7336	47314	.445	.74	6	58	132456	70526	38737123
170	3	14.50	18788	27321	.184	.69	15	160	252246	188387	96842808
170	6	15.50	18204	27723	.180	.65	16	164	261261	194564	103298995
170	8	14.50	19854	4824	.117	.63	18	186	266558	217888	116211369
170	10	14.50	19830	163	.105	.61	18	192	266236	222226	116211369
180	1	19.50	7336	44728	.416	.70	6	58	132456	72605	40080514
180	3	13.50	20158	13817	.141	.70	16	160	251975	197832	106881370
180	6	14.50	19530	19530	.156	.66	16	164	262208	202353	106881370
180	8	14.50	19830	9429	.128	.63	17	176	266236	213961	113561455
180	10	16.50	16560	12756	.138	.55	16	168	253000	199918	106881370
190	1	19.50	7336	42145	.388	.67	6	58	132456	74681	41424049
190	3	13.50	20160	2318	.110	.66	17	160	252000	205399	117368138
190	6	14.50	19536	12416	.136	.63	16	164	262289	208195	110464130
190	8	15.50	18378	4844	.116	.56	17	172	263758	214631	117368138
190	10	15.50	18314	1420	.108	.55	17	176	262840	217137	117368138
200	1	18.50	8626	52964	.450	.74	6	58	147760	78660	42767709
200	3	13.50	20160	16902	.149	.69	15	146	252000	194758	106919272
200	6	13.50	20734	5970	.120	.66	16	158	259175	210175	114047224
200	8	16.50	16540	27654	.182	.57	14	146	252694	187389	99791321
200	10	15.50	18232	19120	.155	.58	15	158	261663	202203	106919272

Table G-22. California Corridor Los Angeles - San Francisco Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	3	25.50	3668	12.5	69	11	132	87	69	38
50	8	22.50	7384	11.3	66	18	224	154	127	67
60	8	21.50	9018	15.3	67	19	224	180	138	75
61	8	21.50	9020	13.4	66	19	224	180	143	76
70	10	20.50	10544	13.9	63	19	240	200	160	80
80	10	19.50	12186	14.3	62	20	244	220	174	89
90	8	17.50	15636	11.0	62	23	278	253	211	107
100	8	16.50	17134	13.8	67	22	256	262	208	108
110	8	15.50	18626	11.8	66	22	256	267	220	112
120	8	15.50	18578	14.1	67	21	230	267	210	112
121	8	15.50	18578	11.8	67	21	230	267	219	113
130	6	14.50	19612	10.9	69	20	220	263	220	111
140	10	14.50	19876	12.1	67	19	212	267	219	110
150	8	15.50	18532	10.9	59	19	208	266	221	114
160	8	15.50	18492	14.8	61	17	188	265	209	106
170	8	14.50	19854	11.7	63	18	186	267	218	116
180	3	13.50	20158	14.1	70	16	160	252	198	107
190	3	13.50	20160	11.0	66	17	160	252	205	117
200	6	13.50	20734	12.0	66	16	158	259	210	114

Table G-23. California Corridor San Diego - San Francisco City-Pair, Augmentor Wing Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
40	1	31.50	1600	5374	.191	.69	5.00	58	46667	34720	17421162
40	2	30.00	2270	303	.108	.64	8.00	88	63056	52236	27873859
40	3	30.00	2290	1796	.123	.67	8.00	86	63611	51298	27873859
50	1	30.00	1898	8017	.225	.65	5.00	58	52722	37708	18544840
50	2	25.50	3378	1484	.117	.66	9.00	102	79758	65680	33380711
50	3	26.50	3162	729	.111	.63	9.00	100	77586	64263	33380711
60	1	27.50	2446	11165	.237	.70	6.00	58	62282	42213	23601111
60	2	24.50	3584	4939	.144	.68	9.00	88	81304	63007	35401666
60	3	24.50	3610	9187	.186	.70	8.00	86	81894	60834	31468147
61	1	27.50	2446	9658	.216	.69	6.00	58	62282	43529	24108088
61	2	24.50	3586	2723	.126	.67	9.00	88	81349	64982	36162132
61	3	24.50	3610	7030	.166	.69	8.00	86	81894	62736	32144117
70	1	25.50	2916	12649	.244	.72	6.00	58	68756	46555	25314807
70	2	24.50	3586	12575	.223	.69	7.00	74	81349	57631	29533942
70	3	21.50	4154	3107	.131	.69	8.00	86	82695	66853	33753076
80	1	23.50	3350	13061	.241	.72	6.00	58	72894	49775	26655886
80	2	20.50	4270	7475	.172	.72	7.00	74	81051	61843	31098533
80	3	22.50	4012	18	.105	.58	8.00	86	83583	70156	35541181
90	1	21.50	3766	11455	.219	.72	6.00	58	74971	52953	27997251
90	2	19.50	4410	2173	.124	.66	7.00	74	79625	65128	32663459
90	3	21.50	4154	7064	.165	.64	7.00	72	82695	63307	32663459
100	1	19.50	4114	7202	.173	.71	6.00	58	74281	56009	29338893
100	2	20.50	4272	239	.107	.58	7.00	74	81089	67936	34228708
100	3	19.50	4434	396	.108	.62	7.00	72	80058	66748	34228708
110	1	18.00	4378	2475	.127	.69	6.00	58	72967	58915	30680801
110	2	20.50	4272	1041	.113	.57	7.00	68	81089	66543	35794268
110	3	20.50	4294	8971	.186	.63	6.00	62	81506	60960	30680801

Table G-23. California Corridor San Diego - San Francisco City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
120	1	19.50	4114	1293	.116	.59	6.00	58	74281	60905	32022964
120	2	19.50	4406	6799	.164	.63	6.00	58	79553	60672	32022964
120	3	18.00	4648	1270	.116	.62	6.00	62	77467	64114	32022964
121	1	20.50	3932	14203	.253	.74	5.00	44	74635	50321	26797662
121	2	19.50	4404	14130	.252	.73	5.00	50	79517	55276	26797662
121	3	19.50	4430	1273	.116	.59	6.00	62	79986	66580	32157194
130	1	19.50	4114	11462	.220	.72	5.00	44	74281	52328	27804474
130	2	16.50	4820	5310	.158	.74	5.00	50	73639	57839	27804474
130	3	20.50	4282	1761	.120	.55	6.00	60	81279	66929	33365369
140	1	18.00	4378	7393	.176	.71	5.00	44	72967	54660	28923336
140	2	16.50	4822	2857	.132	.69	5.00	50	73669	59900	28923336
140	3	19.50	4404	9478	.196	.63	5.00	50	79517	59126	28923336
150	1	16.50	4628	2405	.127	.70	5.00	44	70706	56966	30042375
150	2	16.50	4822	380	.109	.64	5.00	50	73669	61955	30042375
150	3	16.50	4810	285	.108	.64	5.00	50	73486	61867	30042375
160	1	16.50	4628	112	.106	.66	5.00	44	70706	58836	31161580
160	2	18.00	4604	1341	.117	.58	5.00	50	76733	63635	31161580
160	3	18.00	4622	1680	.120	.58	5.00	50	77033	63596	31161580
170	1	15.00	4844	4214	.150	.75	4.00	38	67278	53320	25824749
170	2	19.50	4404	1995	.122	.52	5.00	50	79517	65342	32280936
170	3	19.50	4406	2099	.123	.52	5.00	50	79553	65274	32280936
180	1	15.00	4844	2286	.129	.71	4.00	38	67278	54910	26720342
180	2	19.50	4396	14067	.252	.61	4.00	40	79372	55223	26720342
180	3	20.50	4276	1469	.117	.48	5.00	50	81165	67094	33400428

Table G-23. California Corridor San Diego - San Francisco City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
190	1	19.50	4100	16917	.275	.72	4.00	30	74028	46692	27616033
190	2	18.00	4592	152	.106	.55	5.00	44	76533	63357	34520041
190	3	20.50	4272	1069	.114	.47	5.00	48	81089	66995	34520041
200	1	18.00	4374	13675	.238	.73	4.00	30	72900	48468	28511806
200	2	19.50	4400	1142	.114	.50	5.00	44	79444	64855	35639757
200	3	21.50	4000	12889	.231	.53	4.00	38	79630	55983	28511806

Table G-24. California Corridor San Diego - San Francisco Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	3	30.00	2290	12.3	67	8	86	64	51	28
50	2	25.50	3378	11.7	66	9	102	80	66	33
60	3	24.50	3610	18.6	70	8	86	82	61	31
61	3	24.50	3610	16.6	69	8	86	82	63	32
70	3	21.50	4154	13.1	69	8	86	83	67	34
80	2	20.50	4270	17.2	72	7	74	81	62	31
90	2	19.50	4410	12.4	66	7	74	80	66	33
100	3	19.50	4434	10.8	62	7	72	80	67	34
110	1	18.00	4378	12.7	69	6	58	73	59	31
120	3	18.00	4648	11.6	62	6	62	78	64	32
121	3	19.50	4430	11.6	59	6	62	80	67	32
130	2	16.50	4820	15.8	74	5	50	74	58	28
140	2	16.50	4822	13.2	69	5	50	74	60	29
150	2	16.50	4822	10.9	64	5	50	74	62	30
160	1	16.50	4628	10.6	66	5	44	71	59	31
170	1	15.00	4844	15.0	75	4	38	67	53	26
180	1	15.00	4844	12.9	71	4	38	67	55	27
190	2	18.00	4592	10.6	55	5	44	77	63	35
200	2	19.50	4400	11.4	50	5	44	79	65	36

Table G-25. California Corridor Los Angeles - Sacramento Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS
40	1	25.00	1074	12.9	71	3	38	25	20	10
50	1	22.00	1644	14.2	75	4	44	33	26	15
60	1	21.00	1882	15.4	71	4	44	37	28	16
61	1	21.00	1886	13.6	70	4	44	37	29	16
70	1	20.00	2140	14.9	69	4	44	40	31	17
80	1	18.00	2632	17.1	75	4	44	44	33	18
90	1	17.00	2836	14.6	72	4	44	45	35	19
100	1	16.00	3008	11.2	68	4	44	45	37	20
110	1	19.00	2372	26.8	72	3	30	42	27	15
120	1	18.00	2602	26.1	72	3	30	43	28	16
121	1	18.00	2602	23.9	72	3	30	43	30	16
130	1	17.00	2814	22.4	72	3	30	44	31	17
140	1	16.00	3002	19.7	71	3	30	44	32	17
150	1	15.00	3178	16.3	71	3	30	44	34	18
160	1	13.50	3414	11.4	71	3	30	43	35	19
170	1	15.00	3180	12.1	62	3	30	44	36	19
180	1	16.00	3006	11.1	56	3	30	45	37	20
190	1	17.00	2770	35.0	73	2	20	44	26	14
200	1	16.00	2964	32.5	74	2	20	44	27	14

Table G-26. California Corridor Los Angeles - San Diego Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	1	16.00	596	11.4	62	1	24	9	7	3
50	1	13.00	1528	12.8	69	2	44	18	15	7
60	1	12.00	1966	19.8	74	2	44	22	16	8
61	1	12.00	1972	17.6	73	2	44	22	17	8
70	1	11.50	2248	20.2	73	2	44	24	18	8
80	1	11.00	2458	19.4	70	2	44	25	19	9
90	1	10.50	2822	22.2	71	2	44	27	20	9
100	1	9.00	4132	11.6	71	3	58	34	28	15
110	1	8.50	4524	10.5	71	3	58	36	30	15
120	1	10.00	3062	20.7	67	2	38	28	20	11
121	1	10.00	3062	18.8	67	2	38	28	21	11
130	1	9.50	3476	21.1	70	2	38	31	22	11
140	1	9.00	3922	22.6	74	2	38	33	23	12
150	1	8.00	4946	11.3	75	3	44	37	29	18
160	1	9.50	3350	20.1	70	2	30	29	20	12
170	1	9.00	3760	21.3	74	2	30	31	21	13
180	1	9.00	3780	19.7	70	2	30	32	22	13
190	1	8.50	4198	20.2	74	2	30	33	23	14
200	1	8.50	4216	18.6	70	2	30	33	24	14

Table G-27. California Corridor San Diego - Sacramento Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	1	26.00	714	10.8	74	2	24	17	14	7
50	1	33.00	444	42.4	74	1	12	14	8	4
60	1	23.00	824	10.6	69	2	20	18	15	8
61	1	30.00	534	41.4	73	1	12	15	9	4
70	1	28.00	616	43.0	73	1	12	16	9	4
80	1	25.00	720	41.0	75	1	12	17	10	4
90	1	23.00	802	37.6	74	1	12	17	11	5
100	1	19.00	894	24.5	74	1	12	16	11	5
110	1	16.50	988	16.4	75	1	12	15	12	5
120	1	19.00	884	24.6	74	1	10	16	11	5
121	1	19.00	884	22.0	73	1	10	16	11	5
130	1	16.50	960	14.2	74	1	10	15	12	6
140	1	16.50	962	11.8	69	1	10	15	12	6
150	1	18.00	934	13.7	62	1	10	16	13	6
160	1	18.00	934	11.3	58	1	10	16	13	6
170	1	20.00	884	12.9	52	1	10	16	13	6
180	1	20.00	884	10.8	49	1	10	16	14	7
190	1	23.00	792	11.4	42	1	10	17	14	7
200	1	23.00*	792	09.4	40	1	10	17	14	7

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-28. California Corridor San Francisco - Sacramento Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	1	11.00*	856	03.9	71	1	30	9	8	3
50	1	9.50*	1104	05.9	74	1	30	10	9	4
60	1	9.50*	1046	09.3	73	1	24	9	8	4
61	1	9.50*	1048	07.2	72	1	24	9	8	4
70	1	9.00*	1162	07.0	69	1	24	10	9	4
80	1	8.50*	1280	06.0	67	1	24	10	9	4
90	1	8.50*	1280	03.4	59	1	24	10	10	5
100	1	7.00*	1684	03.9	70	1	24	11	10	5
110	1	7.00*	1690	01.8	64	1	24	11	11	5
120	1	7.00*	1618	04.6	67	1	20	10	10	5
121	1	7.00*	1618	03.0	67	1	20	10	10	5
130	1	7.00*	1626	01.7	63	1	20	11	10	6
140	1	7.00*	1626	-00.0	58	1	20	11	11	6
150	1	6.00*	1952	-01.4	65	1	20	11	11	6
160	1	6.00*	1956	-02.7	61	1	20	11	11	6
170	1	6.00*	1956	-04.1	58	1	20	11	12	6
180	1	6.00*	1956	-05.3	54	1	20	11	12	7
190	1	6.00*	1874	-04.4	55	1	18	10	12	7
200	1	6.00*	1874	-05.5	52	1	18	10	12	7

* NO FARE PRODUCED FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-29. California Corridor City-Pair Summary, Augmentor Wing Concept

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
40	LA-SF	3	25.50	3668	2730	.125	.69	11	132	86606	69715	38326556
40	LA-SAC	1	25.00	1074	898	.129	.71	3	38	24861	20019	10452697
40	LA-SD	1	16.00	596	111	.114	.62	1	24	8830	7404	3484232
40	SF-SD	3	30.00	2290	1796	.123	.67	8	86	63611	51298	27873859
40	SD-SAC	1	26.00	714	63	.108	.74	2	24	17189	14496	6968465
40	SF-SAC	1	11.00*	856	-830	.039	.71	1	30	8719	8233	3484232
	TOTAL	10	-	9198	4768	.119	.69	26	334	209816	171165	90590041
50	LA-SF	8	22.50	7384	1908	.113	.66	18	224	153833	126736	66761422
50	LA-SAC	1	22.00	1644	1968	.142	.75	4	44	33489	25923	14835872
50	LA-SD	1	13.00	1528	601	.128	.69	2	44	18393	14993	7417936
50	SF-SD	2	25.50	3378	1484	.117	.66	9	102	79758	65680	33380711
50	SD-SAC	1	33.00	444	4253	.424	.74	1	12	13567	7914	3708968
50	SF-SAC	1	9.50*	1104	-619	.059	.74	1	30	9711	8931	3708968
	TOTAL	14	-	15482	9595	.126	.68	35	456	308751	250177	129813877
60	LA-SF	8	21.50	9018	12899	.153	.67	19	224	179525	138428	74736850
60	LA-SAC	1	21.00	1882	2745	.154	.71	4	44	36594	27913	15734074
60	LA-SD	1	12.00	1966	2624	.198	.74	2	44	21844	16252	7867037
60	SF-SD	3	24.50	3610	9187	.186	.70	8	86	81894	60834	31468147
60	SD-SAC	1	23.00	824	25	.106	.69	2	20	17548	14555	7867037
60	SF-SAC	1	9.50*	1046	-173	.093	.73	1	24	9201	7889	3933518
	TOTAL	15	-	18346	27307	.159	.69	36	442	346606	265871	141606663
61	LA-SF	8	21.50	9020	7951	.134	.66	19	224	179565	142810	76342279
61	LA-SAC	1	21.00	1886	1814	.136	.70	4	44	36672	28794	16072059
61	LA-SD	1	12.00	1972	2062	.176	.73	2	44	21911	16817	8036029
61	SF-SD	3	24.50	3610	7030	.166	.69	8	86	81894	62736	32144117
61	SD-SAC	1	30.00	534	4466	.414	.73	1	12	14833	8852	4018015
61	SF-SAC	1	9.50*	1048	-470	.072	.72	1	24	9219	8172	4018015
	TOTAL	15	-	18070	22853	.150	.68	35	434	344094	268181	140630514

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-29. California Corridor City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
70	LA-SF	10	20.50	10544	9801	.139	.63	19	240	200141	160094	80163556
70	LA-SAC	1	20.00	2140	2656	.149	.69	4	44	39630	30607	16876538
70	LA-SD	1	11.50	2248	2933	.202	.73	2	44	23937	17820	8438269
70	SF-SD	3	21.50	4154	3107	.131	.69	8	86	82695	66853	33753076
70	SD-SAC	1	28.00	616	4934	.430	.73	1	12	15970	9445	4219135
70	SF-SAC	1	9.00*	1162	-529	.070	.69	1	24	9683	8621	4219135
	TOTAL	17	-	20864	22902	.148	.66	35	450	372056	293440	147669709
80	LA-SF	10	19.50	12186	12031	.143	.62	20	244	220025	174470	88852953
80	LA-SAC	1	18.00	2632	4231	.171	.75	4	44	43867	32931	17770591
80	LA-SD	1	11.00	2458	2840	.194	.70	2	44	25035	18843	8885295
80	SF-SD	2	20.50	4270	7475	.172	.72	7	74	81051	61843	31098533
80	SD-SAC	1	25.00	720	4865	.410	.75	1	12	16667	10125	4442648
80	SF-SAC	1	8.50*	1280	-713	.060	.67	1	24	10074	9111	4442648
	TOTAL	16	-	23546	30729	.160	.66	35	442	396719	307323	155492668
90	LA-SF	8	17.50	15636	2072	.110	.62	23	278	253361	210797	107322795
90	LA-SAC	1	17.00	2836	2777	.146	.72	4	44	44641	34822	18664834
90	LA-SD	1	10.50	2822	3908	.222	.71	2	44	27436	20007	9332417
90	SF-SD	2	19.50	4410	2173	.124	.66	7	74	79625	65128	32663459
90	SD-SAC	1	23.00	802	4552	.376	.74	1	12	17080	10767	4666208
90	SF-SAC	1	8.50*	1280	-1188	.034	.59	1	24	10074	9501	4666208
	TOTAL	14	-	27786	14294	.127	.65	38	476	432217	351022	177315921
100	LA-SF	8	16.50	17134	12789	.138	.67	22	256	261769	208392	107575940
100	LA-SAC	1	16.00	3008	521	.112	.68	4	44	44563	36662	19559262
100	LA-SD	1	9.00	4132	562	.116	.71	3	58	34433	28337	14669446
100	SF-SD	3	19.50	4434	396	.108	.62	7	72	80058	66748	34228708
100	SD-SAC	1	19.00	894	2458	.245	.74	1	12	15728	11425	4889815
100	SF-SAC	1	7.00*	1684	-1161	.039	.70	1	24	10915	10230	4889815
	TOTAL	15	-	31286	15565	.128	.67	38	466	447466	361794	185812986

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-29. California Corridor City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
110	LA-SF	8	15.50	18626	5332	.118	.66	22	256	267318	219540	112496270
110	LA-SAC	1	19.00	2372	9000	.268	.72	3	30	41730	26942	15340401
110	LA-SD	1	8.50	4524	10	.105	.71	3	58	35606	29808	15340401
110	SF-SD	1	18.00	4378	2475	.127	.69	6	58	72967	58915	30680801
110	SD-SAC	1	16.50	988	1080	.164	.75	1	12	15094	12085	5113467
110	SF-SAC	1	7.00*	1690	-1600	.018	.64	1	24	10954	10624	5113467
	TOTAL	13	-	32578	16297	.130	.68	36	438	443669	357914	184084807
120	LA-SF	8	15.50	18578	14388	.141	.67	21	230	266629	209953	112080374
120	LA-SAC	1	18.00	2602	8948	.261	.72	3	30	43367	28378	16011482
120	LA-SD	1	10.00	3062	3928	.207	.67	2	38	28352	20396	10674321
120	SF-SD	3	18.00	4648	1270	.116	.62	6	62	77467	64114	32022964
120	SD-SAC	1	19.00	884	2701	.246	.74	1	10	15552	10837	5337161
120	SF-SAC	1	7.00*	1618	-1127	.046	.67	1	20	10487	9600	5337161
	TOTAL	15	-	31392	30108	.151	.67	34	390	441854	343278	181463463
121	LA-SF	8	15.50	18578	5391	.118	.67	21	230	266629	218773	112550179
121	LA-SAC	1	18.00	2602	7750	.239	.72	3	30	43367	29550	16078597
121	LA-SD	1	10.00	3062	3212	.188	.67	2	38	28352	21095	10719065
121	SF-SD	3	19.50	4430	1273	.116	.59	6	62	79986	66580	32157194
121	SD-SAC	1	19.00	884	2222	.220	.73	1	10	15552	11307	5359532
121	SF-SAC	1	7.00*	1618	-1436	.030	.67	1	20	10487	9901	5359532
	TOTAL	15	-	31174	18412	.133	.66	34	390	444373	357206	182224099
130	LA-SF	6	14.50	19612	1681	.109	.69	20	220	263309	219666	111217897
130	LA-SAC	1	17.00	2814	7152	.224	.72	3	30	44294	30848	16682685
130	LA-SD	1	9.50	3476	4248	.211	.70	2	38	30576	22132	11121790
130	SF-SD	2	16.50	4820	5310	.158	.74	5	50	73639	57839	27804474
130	SD-SAC	1	16.50	960	748	.142	.74	1	10	14667	11820	5560895
130	SF-SAC	1	7.00*	1626	-1766	.017	.63	1	20	10539	10207	5560895
	TOTAL	12	-	33308	17373	.132	.70	32	368	437024	352512	177948636

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-29. California Corridor City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
140	LA-SF	10	14.50	19876	6296	.121	.67	19	212	266854	219089	109908676
140	LA-SAC	1	16.00	3002	5709	.197	.71	3	30	44474	32218	17354001
140	LA-SD	1	9.00	3922	5049	.226	.74	2	38	32683	23269	11569334
140	SF-SD	2	16.50	4822	8257	.132	.69	5	50	73669	59900	28923336
140	SD-SAC	1	16.50	962	269	.118	.69	1	10	14697	12246	5784667
140	SF-SAC	1	7.00*	1626	-2183	-.000	.58	1	20	10539	10540	5784667
	TOTAL	16	-	34210	23397	.133	.68	31	360	442916	357262	179324681
150	LA-SF	8	15.50	18532	1473	.109	.59	19	208	265969	221423	114161027
150	LA-SAC	1	15.00	3178	3770	.163	.71	3	30	44139	33568	18025425
150	LA-SD	1	8.00	4946	540	.113	.75	3	44	36637	29296	18025425
150	SF-SD	2	16.50	4822	380	.109	.64	5	50	73669	61955	30042375
150	SD-SAC	1	18.00	934	682	.137	.62	1	10	15567	12618	6008475
150	SF-SAC	1	6.00*	1952	-2568	-.014	.65	1	20	10844	11145	6008475
	TOTAL	14	-	34364	4277	.111	.63	32	362	446825	370005	192271202
160	LA-SF	8	15.50	18492	16257	.148	.61	17	188	265394	209163	105949372
160	LA-SAC	1	13.50	3414	616	.114	.71	3	30	42675	35005	18696948
160	LA-SD	1	9.50	3350	4291	.201	.70	2	30	29468	20473	12464632
160	SF-SD	1	16.50	4628	112	.106	.66	5	44	70706	58836	31161580
160	SD-SAC	1	18.00	934	177	.113	.58	1	10	15567	13038	6232316
160	SF-SAC	1	6.00*	1956	-2965	-.027	.61	1	20	10867	11480	6232316
	TOTAL	13	-	32774	18488	.134	.63	29	322	434677	347995	180737164
170	LA-SF	8	14.50	19854	4824	.117	.63	18	186	266558	217888	116211369
170	LA-SAC	1	15.00	3180	1121	.121	.62	3	30	44167	35738	19368562
170	LA-SD	1	9.00	3760	5014	.213	.74	2	30	31333	21448	12912374
170	SF-SD	1	15.00	4844	4214	.150	.75	4	38	67278	53320	25824749
170	SD-SAC	1	20.00	884	564	.129	.52	1	10	16370	13371	6456187
170	SF-SAC	1	6.00*	1956	-3380	-.041	.58	1	20	10867	11810	6456187
	TOTAL	13	-	34478	12357	.123	.65	29	314	436573	353575	187229428

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-29. California Corridor City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
180	LA-SF	3	13.50	20158	13817	.141	.70	16	160	251975	197832	106881370
180	LA-SAC	1	16.00	3006	413	.111	.56	3	30	44533	36559	20040257
180	LA-SD	1	9.00	3780	4400	.197	.70	2	30	31500	22059	13360171
180	SF-SD	1	15.00	4844	2286	.129	.71	4	38	67278	54910	26720342
180	SD-SAC	1	20.00	884	60	.108	.49	1	10	16370	13789	6680086
180	SF-SAC	1	6.00*	1956	-3794	-.053	.54	1	20	10867	12140	6680086
	TOTAL	8	-	34628	17182	.132	.67	27	288	422523	337289	180362312
190	LA-SF	3	13.50	20160	2318	.110	.66	17	160	252000	205399	117368138
190	LA-SAC	1	17.00	2770	12156	.350	.73	2	20	43602	26237	13808016
190	LA-SD	1	8.50	4198	4791	.202	.74	2	30	33040	23039	13808016
190	SF-SD	2	18.00	4592	152	.106	.55	5	44	76533	63357	34520041
190	SD-SAC	1	23.00	792	215	.114	.42	1	10	16867	14047	6904008
190	SF-SAC	1	6.00*	1874	-3703	-.044	.55	1	18	10411	11510	6904008
	TOTAL	9	-	34386	15929	.128	.64	28	282	432453	343589	193312227
200	LA-SF	6	13.50	20734	5970	.120	.66	16	158	259175	210175	114047224
200	LA-SAC	1	16.00	2964	11288	.325	.74	2	20	43911	27245	14255903
200	LA-SD	1	8.50	4216	4156	.186	.70	2	30	33181	23647	14255903
200	SF-SD	2	19.50	4400	1142	.114	.50	5	44	79444	64855	35639757
200	SD-SAC	1	23.00*	792	-287	.094	.40	1	10	16867	14465	7127951
200	SF-SAC	1	6.00*	1874	-4090	-.055	.52	1	18	10411	11812	7127951
	TOTAL	12	-	34980	18179	.131	.62	27	280	442989	352199	192454689

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table G-30. California Corridor Summary,* Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	AVERAGE FARE CENTS PER MILE	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	10	7.25	9198	11.9	69	26	334	210	171	91
50	14	6.54	15482	12.6	68	35	456	309	250	130
60	15	6.16	18346	15.9	69	36	442	347	266	142
61	15	6.25	18070	15.0	68	35	434	344	268	141
70	17	5.87	20864	14.8	66	35	450	372	293	148
80	16	5.56	23546	16.0	66	35	442	397	307	155
90	14	5.09	27786	12.7	65	38	476	432	351	177
100	15	4.85	31286	12.8	67	38	466	447	362	186
110	13	4.63	32578	13.0	68	36	438	444	358	184
120	15	4.65	31392	15.1	67	34	390	442	343	181
121	15	4.73	31174	13.3	66	34	390	444	357	182
130	12	4.34	33308	13.2	70	32	368	437	353	178
140	16	4.35	34210	13.3	68	31	360	443	357	179
150	14	4.48	34364	11.1	63	32	362	447	370	192
160	13	4.43	32774	13.4	63	29	322	435	348	181
170	13	4.25	34478	12.3	65	29	314	437	354	187
180	8	4.10	34628	13.2	67	27	288	423	337	180
190	9	4.30	34386	12.8	64	28	282	432	344	193
200	12	4.29	34980	13.1	62	27	280	443	352	192

* BEST CASE FOR EACH AIRCRAFT CAPACITY SATISFYING ALL OPTIMIZATION CONSTRAINTS

APPENDIX H

MIDWEST TRIANGLE TABULATED RESULTS
(All Costs Expressed in 1970 Dollars)

APPENDIX H

TABLES

TABLES (Continued)

Table H-1. Midwest Triangle Chicago - Detroit City-Pair, Deflected Slipstream Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
30	1	34.00	1124	4013	.208	.65	4	58	35385	25886	10134840
30	2	30.00	1828	3493	.171	.69	6	88	50778	39054	15202261
30	3	32.00	1574	794	.132	.62	6	84	46637	37613	15202261
30	4	34.00	1204	5069	.231	.65	4	62	37904	27348	10134840
40	1	30.00	1634	7773	.244	.70	5	58	45389	30076	13926297
40	2	25.50	2704	698	.127	.66	8	102	63844	51083	22282075
40	3	25.50	2860	1717	.137	.67	8	106	67528	53748	22282075
40	4	28.50	2258	2178	.145	.60	7	94	59586	46853	19496816
50	1	27.00	2130	11640	.290	.73	5	58	53250	33407	15153854
50	2	24.00	2920	4543	.167	.66	7	88	64889	48860	21215395
50	3	25.50	2842	4886	.171	.62	7	92	67103	50731	21215395
50	4	27.00	2502	2614	.147	.57	7	88	62550	48450	21215395
60	1	25.50	2384	11284	.273	.69	5	58	56289	36153	16351759
60	2	22.50	3154	9699	.230	.71	6	74	65708	45386	19622111
60	3	21.00	3528	557	.125	.64	7	92	68600	55650	22892463
60	4	24.00	3006	1565	.135	.57	7	88	66800	52842	22892463
70	1	22.50	2890	11279	.263	.71	5	58	60208	39444	17520547
70	2	21.00	3442	256	.122	.60	7	82	66928	53393	24528765
70	3	22.50	3288	9118	.216	.65	6	72	68500	48000	21024656
70	4	22.50	3234	6304	.186	.61	6	76	67375	49689	21024656
80	1	19.50	3408	8698	.223	.73	5	58	61533	42733	18660741
80	2	19.50	3670	1493	.135	.60	6	76	66264	52648	22392889
80	3	19.50	3738	3746	.157	.65	6	72	67492	51623	22392889
80	4	19.50	3698	1188	.132	.61	6	76	66769	53459	22392889

Table H-1. Midwest Triangle Chicago - Detroit City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
90	1	17.00	3830	3809	.163	.73	5	58	60287	45773	19772862
90	2	18.00	3898	6822	.196	.70	5	62	64967	47441	19772862
90	3	19.50	3738	463	.124	.58	6	72	67492	54183	23727434
90	4	19.50	3646	5425	.181	.61	5	66	65831	49701	19772862
100	1	17.00	3830	1174	.132	.66	5	58	60287	47821	20857422
100	2	19.50	3624	9692	.223	.67	5	54	65433	44450	20857422
100	3	22.50	3182	6219	.186	.51	5	62	66292	48781	20857422
100	4	18.00	3898	2233	.144	.61	5	64	64967	51442	20857422
110	1	19.50	3408	792	.128	.53	5	58	61533	48877	21914927
110	2	16.00	4184	2534	.146	.70	5	54	61985	47587	21914927
110	3	19.50	3678	2484	.145	.54	5	62	64408	52060	21914927
110	4	18.00	3898	628	.126	.57	5	62	64967	52475	21914927
120	1	17.00	3830	8622	.224	.73	4	44	60287	41727	18356699
120	2	16.00	4186	161	.122	.65	5	54	62015	49432	22945874
120	3	19.50	3602	10265	.244	.60	4	50	65036	44834	18356699
120	4	18.00	3814	8404	.221	.64	4	50	63567	45225	18356699
121	1	16.00	3986	5320	.184	.75	4	44	59052	43750	18438022
121	2	17.00	4050	164	.122	.62	5	54	63750	51109	23047527
121	3	19.50	3602	8339	.220	.60	4	50	65036	46716	18438022
121	4	17.00	3958	4892	.179	.65	4	50	62302	47428	18438022
130	1	15.00	4126	1511	.137	.72	4	44	57306	45422	19160605
130	2	19.50	3626	725	.127	.52	5	54	65469	51778	23950756
130	3	19.50	3560	7084	.202	.57	4	48	64278	46821	19160605
130	4	15.00	4220	15	.120	.68	4	48	58611	48223	19160605

Table H-1. Midwest Triangle Chicago - Detroit City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
140	1	16.00	3986	1670	.139	.65	4	44	59052	46585	19944044
140	2	16.00	4166	1936	.142	.62	4	48	61719	48985	19944044
140	3	18.00	3822	3889	.163	.57	4	48	63700	49014	19944044
140	4	16.00	4080	154	.122	.61	4	48	60444	49493	19944044
150	1	17.00	3830	1385	.135	.58	4	44	60287	47692	20707398
150	2	16.00	4168	8	.120	.58	4	48	61748	50530	20707398
150	3	17.00	3990	625	.127	.55	4	48	62806	50971	20707398
150	4	17.00	3962	361	.124	.55	4	48	62365	50794	20707398
160	1	18.00	3666	726	.128	.52	4	44	61100	48761	21451042
160	2	17.00	4036	167	.122	.53	4	48	63530	51750	21451042
160	3	17.00	3906	11306	.276	.68	3	36	61483	41467	16088281
160	4	19.50	3528	733	.128	.46	4	48	63700	51354	21451042
170	1	17.00	3790	13023	.294	.74	3	30	59657	37630	16631507
170	2	17.00	3864	12931	.292	.71	3	32	60822	38888	16631507
170	3	15.00	4172	5717	.196	.68	3	36	57944	43224	16631507
170	4	21.00	3312	6	.120	.41	4	48	64400	52388	22175343
180	1	16.00	3952	10285	.253	.73	3	30	58548	38973	17160498
180	2	16.00	4024	10064	.250	.70	3	32	59615	40261	17160498
180	3	14.00	4322	2035	.146	.67	3	36	56026	44700	17160498
180	4	21.00*	3312	-1884	.102	.38	4	48	64400	53897	22880665
190	1	14.00	4266	5081	.184	.75	3	30	55300	40650	17675521
190	2	15.00	4162	6666	.204	.68	3	32	57806	41570	17675521
190	3	14.00	4328	701	.129	.63	3	36	56104	45834	17675521
190	4	21.00*	3312	-3744	.085	.36	4	48	64400	55386	23567361
200	1	13.00	4432	1531	.139	.74	3	30	53348	41976	18176836
200	2	13.00	4452	536	.127	.70	3	32	53589	43213	18176836
200	3	14.00	4286	706	.129	.63	3	34	55559	45013	18176836
200	4	21.00*	3276	-4364	.080	.36	4	46	63700	54943	24235782

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-2. Midwest Triangle Chicago - Detroit City-Pair, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	2	30.00	1828	17.1	69	6	88	51	39	15
40	3	25.50	2860	13.7	67	8	106	68	54	22
50	2	24.00	2920	16.7	66	7	88	65	49	21
60	3	21.00	3528	12.5	64	7	92	69	56	23
70	2	21.00	3442	12.2	60	7	82	67	53	25
80	3	19.50	3738	15.7	65	6	72	67	52	22
90	2	18.00	3898	19.6	70	5	62	65	47	20
100	1	17.00	3830	13.2	66	5	58	60	48	21
110	2	16.00	4184	14.6	70	5	54	62	48	22
120	2	16.00	4186	12.2	65	5	54	62	49	23
121	2	17.00	4050	12.2	62	5	54	64	51	23
130	4	15.00	4220	12.0	68	4	48	59	48	19
140	2	16.00	4166	14.2	62	4	48	62	49	20
150	2	16.00	4168	12.0	58	4	48	62	51	21
160	2	17.00	4036	12.2	53	4	48	64	52	21
170	3	15.00	4172	19.6	68	3	36	58	43	17
180	3	14.00	4322	14.6	67	3	36	56	45	17
190	3	14.00	4328	12.9	63	3	36	56	46	18
200	2	13.00	4452	12.7	70	3	32	54	43	18

Table H-3. Midwest Triangle Chicago - Cleveland City-Pair, Deflected Slipstream Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
30	1	31.50	1264	556	.130	.73	5	58	36867	29453	12668550
30	2	36.00	872	1896	.161	.69	4	42	29067	21684	10134840
30	3	36.00*	892	-460	.110	.59	4	50	29733	24706	10134840
40	1	27.00	1724	2514	.160	.74	5	58	43100	33046	13926297
40	2	31.50	1368	1507	.144	.63	5	54	39900	30854	13926297
40	3	33.00	1222	4509	.210	.64	4	48	37339	26799	11141038
50	1	25.50	1866	4	.120	.64	5	58	44058	35851	15153854
50	2	28.50	1670	1933	.148	.62	5	54	44069	33932	15153854
50	3	27.00	1854	1154	.137	.62	5	60	46350	36992	15153854
60	1	24.00	1978	6284	.226	.75	4	44	43956	30589	13081408
60	2	24.00	2032	1233	.137	.68	5	50	45156	35071	16351759
60	3	27.00	1824	6242	.226	.63	4	48	45600	32276	13081408
70	1	20.00	2236	781	.132	.73	4	44	41407	33038	14016437
70	2	25.50	1862	5050	.200	.63	4	42	43964	31326	14016437
70	3	22.50	2106	1358	.141	.63	4	48	43875	34929	14016437
80	1	22.50	2072	625	.129	.59	4	44	43167	34460	14928593
80	2	22.50	2060	1278	.139	.61	4	42	42917	33557	14928593
80	3	21.00	2214	90	.121	.63	4	44	43050	34878	14928593
90	1	24.00	1966	10905	.324	.73	3	30	43689	26362	11863717
90	2	22.50	2040	8064	.271	.71	3	32	42500	28013	11863717
90	3	25.50	1906	501	.127	.48	4	44	45003	35939	15818290
100	1	20.00	2222	6184	.230	.74	3	30	41148	28189	12514453
100	2	20.00	2246	5008	.209	.70	3	32	41593	29810	12514453
100	3	24.00	1942	4957	.208	.54	3	36	43156	31424	12514453

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-3. Midwest Triangle Chicago - Cleveland City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
110	1	17.00	2416	1058	.138	.73	3	30	38030	29854	13148956
110	2	18.00	2384	1188	.140	.68	3	32	39733	31427	13148956
110	3	21.00	2164	1596	.147	.55	3	36	42078	33364	13148956
120	1	18.00	2370	1114	.138	.66	3	30	39500	30932	13767525
120	2	18.00	2360	694	.131	.66	3	30	39333	31186	13767525
120	3	20.00	2220	222	.124	.54	3	34	41111	33435	13767525
121	1	19.00	2310	1016	.136	.64	3	30	40639	32136	13828516
121	2	19.00	2294	475	.128	.63	3	30	40357	32396	13828516
121	3	22.50	2050	664	.131	.50	3	34	42708	34558	13828516
130	1	20.00	2224	419	.126	.57	3	30	41185	32986	14370453
130	2	20.00	2226	141	.122	.57	3	30	41222	33301	14370453
130	3	25.50	1846	558	.129	.42	3	34	43586	35248	14370453
140	1	22.50	2062	1102	.136	.49	3	30	42958	33759	14958033
140	2	22.50	2032	226	.123	.48	3	30	42333	34009	14958033
140	3	25.50*	1846	-1050	.104	.39	3	34	43586	36539	14958033
150	1	20.00	2192	9780	.329	.73	2	20	40593	25207	10353699
150	2	25.50	1848	499	.127	.41	3	30	43633	34726	15530549
150	3	25.50*	1834	-1207	.103	.38	3	32	43303	36102	15530549
160	1	17.00	2378	5225	.228	.74	2	20	37431	26400	10725521
160	2	24.00	1808	8977	.306	.56	2	20	40178	25395	10725521
160	3	25.50*	1834	-2702	.083	.36	3	32	43303	37295	16088281
170	1	15.00	2516	1473	.149	.74	2	20	34944	27469	11087672
170	2	22.50	1930	7765	.275	.57	2	20	40208	26441	11087672
170	2	25.50*	1802	-3093	.079	.35	3	30	42547	36637	16631507

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-3. Midwest Triangle Chicago - Cleveland City-Pair, Deflected Slipstream Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
180	1	15.00	2520	596	.132	.70	2	20	35000	28211	11440332
180	2	21.00	2064	6434	.245	.57	2	20	40133	27505	11440332
180	3	25.50*	1802	-4482	.062	.33	3	30	42547	37739	17160498
190	1	16.00	2462	1299	.144	.65	2	20	36474	28796	11783681
190	2	19.00	2200	3759	.191	.58	2	20	38704	28566	11783681
190	3	25.50*	1802	-5849	.047	.32	3	30	42547	38827	17675521
200	1	16.00	2462	404	.127	.62	2	20	36474	29510	12117891
200	2	18.00	2258	1642	.150	.56	2	20	37633	29431	12117891
200	3	25.50*	1802	-7195	.032	.30	3	30	42547	39902	18176836

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-4. Midwest Triangle Chicago - Cleveland Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	1	31.50	1264	13.0	73	5	58	37	29	13
40	1	27.00	1724	16.0	74	5	58	43	33	14
50	1	25.50	1866	12.0	64	5	58	44	36	15
60	2	24.00	2032	13.7	68	5	50	45	35	16
70	1	20.00	2236	13.2	73	4	44	41	33	14
80	3	21.00	2214	12.1	63	4	44	43	35	15
90	2	22.50	2040	27.1	71	3	32	43	28	12
100	2	20.00	2246	20.9	70	3	32	42	30	13
110	1	17.00	2416	13.8	73	3	30	38	30	13
120	1	18.00	2370	13.8	66	3	30	40	31	14
121	1	19.00	2310	13.6	64	3	30	41	32	14
130	2	20.00	2226	12.2	57	3	30	41	33	14
140	1	22.50	2062	13.6	49	3	30	43	34	15
150	1	20.00	2192	32.9	73	2	20	41	25	10
160	1	17.00	2378	22.8	74	2	20	37	26	11
170	1	15.00	2516	14.9	74	2	20	35	27	11
180	1	15.00	2520	13.2	70	2	20	35	28	11
190	1	16.00	2462	14.4	65	2	20	36	29	12
200	1	16.00	2462	12.7	62	2	20	36	30	12

Table H-5. Midwest Triangle Cleveland - Detroit Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS
30	1	17.50*	532	06.4	74	1	24	9	8	3
40	1	15.00*	718	08.9	75	1	24	10	9	3
50	1	14.00*	824	07.5	69	1	24	11	10	3
60	1	13.50*	830	09.4	69	1	20	10	9	3
70	1	13.50*	830	05.8	59	1	20	10	9	4
80	1	13.50*	830	02.7	52	1	20	10	10	4
90	1	13.50*	830	-00.1	46	1	20	10	10	4
100	1	13.50*	830	-02.5	41	1	20	10	11	4
110	1	13.50*	830	-04.6	38	1	20	10	11	4
120	1	13.50*	830	-06.6	35	1	20	10	12	5
121	1	13.50*	830	-08.5	34	1	20	10	12	5
130	1	13.00*	854	-06.3	36	1	18	10	12	5
140	1	13.00*	854	-07.8	34	1	18	10	12	5
150	1	13.00*	854	-09.2	32	1	18	10	12	5
160	1	13.00*	854	-10.5	30	1	18	10	13	5
170	1	13.00*	854	-11.6	28	1	18	10	13	6
180	1	13.00*	854	-12.7	26	1	18	10	14	6
190	1	13.00*	850	-09.5	28	1	16	10	13	6
200	1	13.00*	850	-10.5	27	1	16	10	13	6

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-6. Midwest Triangle City-Pair Summary, Deflected Slipstream Concept

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
30	CHI-DET	2	30.00	1828	3493	.171	.69	6	88	50778	39054	15202261
30	CHI-CLV	1	31.50	1264	556	.130	.73	5	58	36867	29453	12668550
30	DET-CLV	1	17.50*	532	-637	.064	.74	1	24	8620	7886	2533710
	TOTAL	4	-	3624	3412	.144	.71	12	170	96265	76393	30404521
40	CHI-DET	3	25.50	2860	1717	.137	.67	8	106	67528	53748	22282075
40	CHI-CLV	1	27.00	1724	2514	.160	.74	5	58	43100	33046	13926297
40	DET-CLV	1	15.00*	718	-392	.089	.75	1	24	9972	8857	2785259
	TOTAL	5	-	5302	3839	.141	.71	14	188	120600	95651	38993631
50	CHI-DET	2	24.00	2920	4543	.167	.66	7	88	64889	48860	21215395
50	CHI-CLV	1	25.50	1866	4	.120	.64	5	58	44058	35851	15153854
50	DET-CLV	1	14.00*	824	-611	.075	.69	1	24	10681	9652	3030771
	TOTAL	4	-	5610	3936	.142	.66	13	170	119628	94363	39400020
60	CHI-DET	3	21.00	3528	557	.125	.64	7	92	68600	55650	22892463
60	CHI-CLV	2	24.00	2032	1233	.137	.68	5	50	45156	35071	16351759
60	DET-CLV	1	13.50*	830	-379	.094	.69	1	20	10375	8983	3270352
	TOTAL	6	-	6390	1411	.127	.66	13	162	124131	99704	42514574
70	CHI-DET	2	21.00	3442	256	.122	.60	7	82	66928	53393	24528765
70	CHI-CLV	1	20.00	2236	781	.132	.73	4	44	41407	33038	14016437
70	DET-CLV	1	13.50*	830	-981	.058	.59	1	20	10375	9459	3504109
	TOTAL	4	-	6508	56	.120	.64	12	146	118710	95890	42049311
80	CHI-DET	3	19.50	3738	3746	.157	.65	6	72	67492	51623	22392889
80	CHI-CLV	3	21.00	2214	90	.121	.63	4	44	43050	34878	14928593
80	DET-CLV	1	13.50*	830	-1573	.027	.52	1	20	10375	9928	3732148
	TOTAL	7	-	6782	2263	.132	.62	11	136	120917	96429	41053630
90	CHI-DET	2	18.00	3898	6822	.196	.70	5	62	64967	47441	19772862
90	CHI-CLV	2	22.50	2040	8064	.271	.71	3	32	42500	28013	11863717
90	DET-CLV	1	13.50*	830	-2156	-.001	.46	1	20	10375	10390	3954572
	TOTAL	5	-	6768	12730	.199	.66	9	114	117842	85844	35591151

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-6. Midwest Triangle City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
100	CHI-DET	1	18.00	3898	2233	.144	.61	5	64	64967	51442	20857422
100	CHI-CLV	2	20.00	2246	5008	.209	.70	3	32	41593	29810	12514453
100	DET-CLV	1	13.50*	830	-2728	-.025	.41	1	20	10375	10845	4171484
	TOTAL	7	-	6974	4513	.146	.60	9	116	116935	92097	37543359
110	CHI-DET	2	16.00	4184	2534	.146	.70	5	54	61985	47587	21914927
110	CHI-CLV	1	17.00	2416	1058	.138	.73	3	30	38030	29854	13148956
110	DET-CLV	1	13.50*	830	-3291	-.046	.38	1	20	10375	11294	4382985
	TOTAL	4	-	7430	301	.121	.65	9	104	110390	88735	39446868
120	CHI-DET	2	16.00	4186	161	.122	.65	5	54	62015	49432	22945874
120	CHI-CLV	1	18.00	2370	1114	.138	.66	3	30	39500	30932	13767525
120	DET-CLV	1	13.50*	830	-3845	-.066	.35	1	20	10375	11736	4589175
	TOTAL	4	-	7386	-2570	.106	.59	9	104	111890	92100	41302574
120**	CHI-DET	2	17.00	4050	2205	.141	.63	5	54	63750	49123	22945874
120**	CHI-CLV	1	19.00	2310	2396	.159	.64	3	30	40639	30790	13767525
120	DET-CLV	1	13.50*	830	-3845	-.066	.35	1	20	10375	11736	4589175
	TOTAL	4	-	7190	756	.123	.58	9	104	114764	91649	41302574
121	CHI-DET	2	17.00	4050	164	.122	.62	5	54	63750	51109	23047527
121	CHI-CLV	1	19.00	2310	1016	.136	.64	3	30	40639	32136	13828516
121	DET-CLV	1	13.50*	830	-4261	-.085	.34	1	20	10375	12140	4609505
	TOTAL	4	-	7190	-3081	.103	.57	9	104	114764	95385	41485548
121**	CHI-DET	1	16.00	3986	5320	.184	.75	4	44	59052	43750	18438022
121	CHI-CLV	1	19.00	2310	1016	.136	.64	3	30	40639	32136	13828516
121	DET-CLV	1	13.50*	830	-4261	-.085	.34	1	20	10375	12140	4609505
	TOTAL	3	-	7126	2075	.132	.63	8	94	110066	88026	36876043

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-6. Midwest Triangle City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
130	CHI-DET	4	15.00	4220	15	.120	.68	4	48	58611	48223	19160605
130	CHI-CLV	2	20.00	2226	141	.122	.57	3	30	41222	33301	14370453
130	DET-CLV	1	13.00*	854	-3964	-.063	.36	1	18	10280	11650	4790151
	TOTAL	7	-	7300	-3808	.098	.58	8	96	110113	93174	38321209
130**	CHI-DET	1	16.00	3986	3577	.161	.70	4	44	59052	45102	19160605
130**	CHI-CLV	1	20.00	2224	419	.126	.57	3	30	41185	32986	14370453
130	DET-CLV	1	13.00*	854	-3964	-.063	.36	1	18	10280	11650	4790151
	TOTAL	3	-	7064	32	.120	.59	8	92	110517	89738	38321209
140	CHI-DET	2	16.00	4166	1936	.142	.62	4	48	61719	48985	19944044
140	CHI-CLV	1	22.50	2062	1102	.136	.49	3	30	42958	33759	14958033
140	DET-CLV	1	13.00*	854	-4463	-.078	.34	1	18	10280	12043	4986011
	TOTAL	4	-	7082	-1425	.112	.53	8	96	114957	94787	39888088
140**	CHI-DET	2	17.00	4036	4043	.165	.60	4	48	63530	48690	19944044
140	CHI-CLV	1	22.50	2062	1102	.136	.49	3	30	42958	33759	14958033
140	DET-CLV	1	13.00*	854	-4463	-.078	.34	1	18	10280	12043	4986011
	TOTAL	4	-	6952	682	.123	.52	8	96	116768	94492	39888088
150	CHI-DET	2	16.00	4168	8	.120	.58	4	48	61748	50530	20707398
150	CHI-CLV	1	20.00	2192	9780	.329	.73	2	20	40593	25207	10353699
150	DET-CLV	1	13.00*	854	-4953	-.092	.32	1	18	10280	12430	5176850
	TOTAL	4	-	7214	4835	.149	.56	7	86	112621	88167	36237947
160	CHI-DET	2	17.00	4036	167	.122	.53	4	48	63530	51750	21451042
160	CHI-CLV	1	17.00	2378	5225	.228	.74	2	20	37431	26400	10725521
160	DET-CLV	1	13.00*	854	-5435	-.105	.30	1	18	10280	12812	5362760
	TOTAL	4	-	7268	-43	.119	.53	7	86	111241	90962	37539323

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-6. Midwest Triangle City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
160	CHI-DET	2	17.00	4036	167	.122	.53	4	48	63530	51750	21451042
160**	CHI-CLV	1	18.00	2348	6998	.265	.73	2	20	39133	26329	10725521
160	DET-CLV	1	13.00*	854	-5435	-.105	.30	1	18	10280	12812	5362760
	TOTAL	4	-	7238	1730	.130	.53	7	86	112943	90891	37539323
170	CHI-DET	3	15.00	4172	5717	.196	.68	3	36	57944	43224	16631507
170	CHI-CLV	1	15.00	2516	1473	.149	.74	2	20	34944	27469	11087672
170	DET-CLV	1	13.00*	854	-5909	-.116	.28	1	18	10280	13188	5543836
	TOTAL	5	-	7542	1281	.128	.60	6	74	103168	83881	33263015
180	CHI-DET	3	14.00	4322	2035	.146	.67	3	36	56026	44700	17160498
180	CHI-CLV	1	15.00	2520	596	.132	.70	2	20	35000	28211	11440332
180	DET-CLV	1	13.00*	854	-6376	-.127	.26	1	18	10280	13559	5720166
	TOTAL	5	-	7696	-3745	.096	.58	6	74	101306	86470	34320996
180**	CHI-DET	3	16.00	4048	6606	.205	.62	3	36	59970	44074	17160498
180	CHI-CLV	1	15.00	2520	596	.132	.70	2	20	35000	28211	11440332
180	DET-CLV	1	13.00*	854	-6376	-.127	.26	1	18	10280	13559	5720166
	TOTAL	5	-	7422	826	.125	.56	6	74	105250	85844	34320996
190	CHI-DET	3	14.00	4328	701	.129	.63	3	36	56104	45834	17675521
190	CHI-CLV	1	16.00	2462	1299	.144	.65	2	20	36474	28796	11783681
190	DET-CLV	1	13.00*	850	-5726	-.095	.28	1	16	10231	12768	5891840
	TOTAL	5	-	7640	-3726	.096	.56	6	72	102809	87398	35351042
190**	CHI-DET	1	14.00	4266	5081	.184	.75	3	30	55300	40650	17675521
190	CHI-CLV	1	16.00	2462	1299	.144	.65	2	20	36474	28796	11783681
190	DET-CLV	1	13.00*	850	-5726	-.095	.28	1	16	10231	12768	5891840
		3	-	7578	654	.124	.60	6	66	102005	82214	35351042

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-6. Midwest Triangle City-Pair Summary, Deflected Slipstream Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
200	CHI-DET	2	13.00	4452	536	.127	.70	3	32	53589	43213	18176836
200	CHI-CLV	1	16.00	2462	404	.127	.62	2	20	36474	29510	12117891
200	DET-CLV	1	13.00*	850	-6143	-.105	.27	1	16	10231	13094	6058945
	TOTAL	4	-	7764	-5203	.088	.57	6	68	100294	85817	36353672
200**	CHI-DET	2	14.00	4334	3396	.161	.68	3	32	56181	42945	18176836
200**	CHI-CLV	1	18.00	2350	3363	.182	.59	2	20	39167	29244	12117891
200	DET-CLV	1	13.00*	850	-6143	-.105	.27	1	16	10231	13094	6058945
	TOTAL	4	-	7534	616	.123	.55	6	68	105579	85283	36353672

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-7. Midwest Triangle Summary, Deflected Slipstream Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	AVERAGE FARE CENTS PER MILE	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
30	4	12.12	3624	14.4	71	12	170	96	76	30
40	5	10.20	5302	14.1	71	14	188	121	96	39
50	4	09.79	5610	14.2	66	13	170	120	94	39
60	6	08.61	6390	12.7	66	13	162	124	100	43
70	5	08.25	6508	12.0	64	12	146	119	96	42
80	7	07.90	6782	13.2	62	11	136	121	96	41
90	5	07.88	6768	19.9	66	9	114	118	86	36
100	7	07.36	6974	14.6	60	9	116	117	92	38
110	4	06.70	7430	12.1	65	9	104	110	89	39
120*	4	07.22	7190	12.3	58	9	104	115	92	41
121*	3	06.84	7126	13.2	63	8	94	110	88	39
130*	3	06.96	7064	12.0	59	8	92	111	90	38
140*	4	07.69	6952	12.3	52	8	96	117	94	40
150	4	07.11	7214	15.1	56	7	86	113	88	36
160*	4	07.06	7238	13.0	53	7	86	113	91	38
170	5	06.04	7542	12.8	60	6	74	103	84	33
180*	5	06.26	7422	12.5	56	6	74	105	86	34
190*	3	05.94	7578	12.4	60	6	66	102	82	35
200*	4	06.35	7534	12.3	55	6	68	106	85	36

* ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-8. Midwest Triangle Chicago - Detroit City-Pair, Externally Blown Flap Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
50	1	30.00	1936	12265	.300	.67	4	58	53778	33345	15087714
50	2	25.50	2940	7211	.191	.67	6	88	69417	49954	22631572
50	3	24.00	3322	317	.123	.64	7	104	73822	59212	26403500
50	4	27.00	2788	11995	.261	.66	5	84	69700	47494	18859643
60	1	27.00	2446	16104	.344	.70	4	58	61150	36399	15971787
60	2	22.50	3420	4418	.161	.65	6	88	71250	53862	23957681
60	3	22.50	3532	5026	.166	.65	6	90	73583	55588	23957681
60	4	24.00	3256	10293	.234	.65	5	84	72356	51255	19964734
61	1	27.00	2446	15868	.339	.69	4	58	61150	36588	16060213
61	2	22.50	3424	4139	.158	.64	6	88	71333	54153	24090319
61	3	22.50	3532	4663	.163	.64	6	90	73583	55879	24090319
61	4	22.50	3520	1793	.136	.60	6	96	73333	58499	24090319
70	1	24.00	2916	16316	.335	.72	4	58	64800	39359	16856160
70	2	21.00	3668	10609	.232	.71	5	74	71322	49306	21070200
70	3	21.00	3776	679	.126	.60	6	90	73422	59055	25284240
70	4	22.50	3452	7083	.195	.60	5	82	71917	53427	21070200
80	1	21.00	3440	14845	.305	.74	4	58	66889	42440	17740726
80	2	17.00	4224	1561	.136	.71	5	74	66489	52923	22175908
80	3	22.50	3472	6161	.182	.56	5	78	72333	54167	22175908
80	4	19.50	3966	3383	.154	.62	5	80	71608	56220	22175908
90	1	18.00	3912	9717	.236	.75	4	58	65200	45400	18625380
90	2	18.00	4120	1025	.130	.62	5	74	68667	55037	23281725
90	3	21.00	3726	2579	.145	.53	5	78	72450	57267	23281725
90	4	19.50	3970	278	.123	.55	5	80	71681	58799	23281725

Table H-8. Midwest Triangle Chicago - Detroit City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
100	1	16.00	4212	3874	.164	.73	4	58	62400	47964	19510016
100	2	19.50	3888	140	.121	.53	5	74	70200	56858	24387520
100	3	21.00	3648	11470	.250	.59	4	62	70933	48901	19510016
100	4	17.00	4236	4848	.175	.66	4	64	66678	51268	19510016
110	1	16.00	4212	1519	.137	.66	4	58	62400	49840	20394529
110	2	18.00	4108	7481	.201	.62	4	60	68467	49945	20394529
110	3	18.00	4142	5978	.185	.61	4	62	69033	52015	20394529
110	4	16.00	4428	816	.129	.63	4	64	65600	53743	20394529
120	1	17.00	4058	994	.130	.58	4	58	63876	51362	21278816
120	2	16.00	4368	769	.128	.61	4	60	64711	52422	21278816
120	3	19.50	3848	19019	.384	.70	3	46	69478	41819	15959112
120	4	17.00	4232	1063	.131	.57	4	62	66615	54033	21278816
121	1	18.00	3912	14379	.319	.73	3	44	65200	42146	16025421
121	2	17.00	4214	939	.130	.58	4	60	66331	53825	21367228
121	3	18.00	4130	2787	.149	.57	4	60	68833	54478	21367228
121	4	18.00	4134	1667	.137	.55	4	62	68900	55665	21367228
130	1	16.00	4212	9295	.244	.74	3	44	62400	44106	16622079
130	2	18.00	4108	1189	.132	.53	4	60	68467	55279	22162773
130	3	17.00	4196	11734	.276	.70	3	46	66048	45316	16622079
130	4	19.50	3924	1890	.139	.49	4	62	70850	56961	22162773
140	1	15.00	4358	583	.126	.71	4	44	60528	47468	23046298
140	2	17.00	4142	13876	.298	.74	3	40	65198	41965	17284723
140	3	18.00	4130	2465	.144	.55	4	54	68833	53892	23046298
140	4	19.50	3904	1934	.139	.48	4	58	70489	56079	23046298

Table H-8. Midwest Triangle Chicago - Detroit City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
150	1	16.00	4212	837	.128	.64	4	44	62400	48609	23929289
150	2	15.00	4438	8007	.219	.74	3	40	61639	43916	17946967
150	3	17.00	4184	9392	.236	.63	3	44	65859	46751	17946967
150	4	21.00	3630	320	.123	.42	4	58	70583	57309	23929289
160	1	14.00	4484	3656	.164	.74	3	38	58126	44396	18608735
160	2	17.00	4128	11868	.261	.68	3	38	64978	43036	18608735
160	3	15.00	4472	4674	.176	.67	3	42	62111	47363	18608735
160	4	22.50*	3364	-452	.116	.38	4	56	70083	57103	24811647
170	1	14.00	4484	2056	.144	.69	3	38	58126	45638	19269954
170	2	15.00	4428	6129	.190	.69	3	38	61500	44939	19269954
170	3	14.00	4622	426	.125	.65	3	42	59915	49057	19269954
170	4	22.50*	3364	-2726	.096	.35	4	56	70083	58900	25693271
180	1	14.00	4484	459	.125	.66	3	38	58126	46877	19930547
180	2	14.00	4566	1927	.141	.67	3	38	59189	46472	19930547
180	3	14.00	4592	104	.121	.64	3	40	59526	48632	19930547
180	4	24.00*	3098	-3924	.087	.32	4	54	68844	58382	26574063
190	1	15.00	4346	1414	.135	.60	3	38	60361	47800	20590444
190	2	14.00	4570	395	.124	.63	3	38	59241	47699	20590444
190	3	15.00	4452	1085	.132	.59	3	40	61833	49601	20590444
190	4	24.00*	3098	-6133	.070	.30	4	54	68844	60115	27453925
200	1	14.00	4474	4148	.163	.75	3	30	57996	42345	21249569
200	2	15.00	4436	1497	.136	.58	3	38	61611	48610	21249569
200	3	15.00	4430	932	.130	.58	3	38	61528	49092	21249569
200	4	24.00*	3088	-6793	.067	.30	4	52	68622	60076	28332759

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-9. Midwest Triangle Chicago - Detroit Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	3	24.00	3322	12.3	64	7	104	74	59	26
60	3	22.50	3532	16.6	65	6	90	74	56	24
61	3	22.50	3532	16.3	64	6	90	74	56	24
70	3	21.00	3776	12.6	60	6	90	73	59	25
80	2	17.00	4224	13.6	71	5	74	66	53	22
90	2	18.00	4120	13.0	62	5	74	69	55	23
100	4	17.00	4236	17.5	66	4	64	67	51	20
110	4	16.00	4428	12.9	63	4	64	66	54	20
120	2	16.00	4368	12.8	61	4	60	65	52	21
121	2	17.00	4214	13.0	58	4	60	66	54	21
130	1	16.00	4212	24.4	74	3	44	62	44	17
140	1	15.00	4358	12.6	71	4	44	61	47	23
150	2	15.00	4438	21.9	74	3	40	62	44	18
160	1	14.00	4484	16.4	74	3	38	58	44	19
170	3	14.00	4622	12.5	65	3	42	60	49	19
180	3	14.00	4592	12.1	64	3	40	60	49	20
190	2	14.00	4570	12.4	63	3	38	59	48	21
200	1	14.00	4474	16.3	75	3	30	58	42	21

Table H-10. Midwest Triangle Chicago - Cleveland City-Pair, Externally Blown Flap Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
50	1	24.00	2088	1351	.140	.72	4	58	46400	36881	15087714
50	2	30.00	1710	4848	.191	.63	4	54	47500	34484	15087714
50	3	30.00	1778	4065	.180	.59	4	60	49389	37155	15087714
60	1	27.00	1880	10254	.310	.71	3	44	47000	30261	11978840
60	2	25.50	2050	2426	.154	.63	4	54	48403	37331	15971787
60	3	27.00	1966	698	.130	.55	4	60	49150	39805	15971787
61	1	25.50	1988	9739	.299	.74	3	44	46939	30679	12045159
61	2	24.00	2128	874	.132	.65	4	54	47289	37720	16060213
61	3	27.00	1966	430	.126	.54	4	60	49150	40026	16060213
70	1	21.00	2282	1235	.136	.74	4	44	44372	34012	16856160
70	2	25.50	2020	552	.127	.55	4	52	47694	38017	16856160
70	3	25.50	2054	411	.125	.54	4	54	48497	38961	16856160
80	1	21.00	2278	6108	.222	.75	3	38	44294	30984	13305545
80	2	22.50	2204	7597	.247	.72	3	38	45917	31116	13305545
80	3	28.50	1880	579	.127	.45	4	52	49611	39428	17740726
90	1	18.00	2464	663	.131	.72	3	38	41067	32841	13969035
90	2	18.00	2496	791	.133	.73	3	38	41600	33247	13969035
90	3	25.50	2026	5940	.214	.54	3	42	47836	34334	13969035
100	1	19.00	2400	198	.123	.63	3	38	42222	34103	14632512
100	2	19.00	2428	276	.124	.64	3	38	42715	34517	14632512
100	3	21.00	2288	61	.121	.54	3	42	44489	36506	14632512

Table H-10. Midwest Triangle Chicago - Cleveland City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
110	1	21.00	2278	788	.131	.54	3	38	44294	35226	15295897
110	2	20.00	2350	869	.133	.59	3	36	43519	34369	15295897
110	3	22.50	2208	1249	.138	.50	3	40	46000	36470	15295897
120	1	22.50	2176	300	.124	.48	3	38	45333	36394	15959112
120	2	21.00	2286	232	.123	.53	3	36	44450	35579	15959112
120	3	24.00	2120	733	.130	.44	3	40	47111	37739	15959112
121	1	22.50	2156	13273	.395	.74	2	24	44917	25860	10683614
121	2	22.50	2202	506	.127	.51	3	36	45875	36693	16025421
121	3	27.00	1916	532	.127	.40	3	40	47900	38692	16025421
130	1	20.00	2328	875	.132	.60	3	30	43111	33237	16622079
130	2	25.50	1976	280	.124	.42	3	36	46656	37377	16622079
130	3	28.50	1802	342	.125	.36	3	38	47553	38212	16622079
140	1	17.00	2494	4657	.210	.74	2	24	39257	28362	11523149
140	2	25.50	1884	10950	.331	.56	2	24	44483	27295	11523149
140	3	28.50*	1802	-1426	.102	.34	3	38	47553	39622	17284723
150	1	15.00	2634	518	.130	.73	2	24	36583	29588	11964645
150	2	24.00	2014	9764	.301	.56	2	24	44756	28514	11964645
150	3	28.50*	1788	-1906	.096	.33	3	36	47183	39373	17946967
160	1	16.00	2564	956	.137	.67	2	24	37985	30313	12405824
160	2	21.00	2212	6401	.234	.58	2	24	43011	29894	12405824
160	3	28.50*	1788	-3607	.077	.31	3	36	47183	40716	18608735
170	1	17.00	2496	1292	.142	.61	2	24	39289	31043	12846636
170	2	19.00	2358	3380	.178	.58	2	24	41483	31148	12846636
170	3	28.50*	1788	-5306	.059	.29	3	36	47183	42057	19269954

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-10. Midwest Triangle Chicago - Cleveland City-Pair, Externally Blown Flap Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
180	1	17.00	2496	164	.123	.58	2	24	39289	31932	13287032
180	2	18.00	2424	996	.137	.56	2	24	40400	32211	13287032
180	3	28.50*	1788	-7002	.042	.28	3	36	47183	43395	19930547
190	1	18.00	2454	749	.132	.54	2	24	40900	32720	13726962
190	2	19.00	2366	1217	.140	.52	2	24	41624	32976	13726962
190	3	28.50*	1788	-8696	.026	.26	3	36	47183	44732	20590444
200	1	16.00	2542	146	.122	.64	2	20	37659	29844	14166380
200	2	19.00	2366	77	.121	.49	2	24	41624	33878	14166380
200	3	28.50*	1788	-10387	.012	.25	3	36	47183	46066	21249569

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-11. Midwest Triangle Chicago - Cleveland Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	1	24.00	2088	14.0	72	4	58	46	37	15
60	2	25.50	2050	15.4	63	4	54	48	37	16
61	2	24.00	2128	13.2	65	4	54	47	38	16
70	1	21.00	2282	13.6	74	4	44	44	34	17
80	1	21.00	2278	22.2	75	3	38	44	31	13
90	2	18.00	2496	13.3	73	3	38	42	33	14
100	2	19.00	2428	12.4	64	3	38	43	35	15
110	2	20.00	2350	13.3	59	3	36	44	34	15
120	2	21.00	2286	12.3	53	3	36	44	36	16
121	2	22.50	2202	12.7	51	3	36	46	37	16
130	1	20.00	2328	13.2	60	3	30	43	33	17
140	1	17.00	2494	21.0	74	2	24	39	28	12
150	1	15.00	2634	13.0	73	2	24	37	30	12
160	1	16.00	2564	13.7	67	2	24	38	30	12
170	1	17.00	2496	14.2	61	2	24	39	31	13
180	1	17.00	2496	12.3	58	2	24	39	32	13
190	1	18.00	2454	13.2	54	2	24	41	33	14
200	1	16.00	2542	12.2	64	2	20	38	30	14

Table H-12. Midwest Triangle Detroit - Cleveland Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	1	15.00*	822	07.4	68	1	24	11	10	4
60	1	15.00*	822	04.1	57	1	24	11	11	4
61	1	15.00*	822	03.8	56	1	24	11	11	4
70	1	15.00*	822	01.2	49	1	24	11	11	4
80	1	15.00*	822	-01.4	43	1	24	11	12	4
90	1	15.00*	822	-03.8	38	1	24	11	12	5
100	1	12.50*	984	-00.3	49	1	20	11	11	5
110	1	12.50*	984	-02.2	45	1	20	11	12	5
120	1	12.50*	984	-03.9	41	1	20	11	12	5
121	1	12.50*	984	-05.3	41	1	20	11	13	5
130	1	12.50*	984	-06.7	38	1	20	11	13	6
140	1	12.50*	984	-08.1	35	1	20	11	14	6
150	1	12.50*	984	-09.4	33	1	20	11	14	6
160	1	14.00*	846	-07.3	29	1	18	11	13	6
170	1	14.00*	846	-08.5	28	1	18	11	13	6
180	1	14.00*	846	-09.5	26	1	18	11	14	7
190	1	14.00*	846	-10.5	25	1	18	11	14	7
200	1	14.00*	846	-11.4	23	1	18	11	15	7

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-13. Midwest Triangle City-Pair Summary, Externally Blown Flap Concept

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
50	CHI-DET	3	24.00	3322	317	.123	.64	7	104	73822	59212	26403500
50	CHI-CLV	1	24.00	2088	1351	.140	.72	4	58	46400	36881	15087714
50	DET-CLV	1	15.00*	822	-784	.074	.68	1	24	11417	10159	3771929
	TOTAL	5	-	6232	884	.124	.67	12	186	131639	106252	45263143
60	CHI-DET	3	22.50	3532	5026	.166	.65	6	90	73583	55588	23957681
60	CHI-CLV	2	25.50	2050	2426	.154	.63	4	54	48403	37331	15971787
60	DET-CLV	1	15.00*	822	-1419	.041	.57	1	24	11417	10674	3992947
	TOTAL	6	-	6404	6033	.150	.64	11	168	133403	103593	43922415
61	CHI-DET	3	22.50	3532	4663	.163	.64	6	90	73583	55879	24090319
61	CHI-CLV	2	24.00	2128	874	.132	.65	4	54	47289	37720	16060213
61	DET-CLV	1	15.00*	822	-1482	.038	.56	1	24	11417	10725	4015053
	TOTAL	6	-	6482	4055	.140	.63	11	168	132289	104324	44165585
70	CHI-DET	3	21.00	3776	679	.126	.60	6	90	73422	59055	25284240
70	CHI-CLV	1	21.00	2282	1235	.136	.74	4	44	44372	34012	16856160
70	DET-CLV	1	15.00*	822	-2053	.012	.49	1	24	11417	11188	4214040
	TOTAL	5	-	6880	-139	.119	.62	11	158	129211	104255	46354440
70	CHI-DET	3	21.00	3776	679	.126	.60	6	90	73422	59055	25284240
70**	CHI-CLV	1	22.50	2180	2521	.153	.71	4	44	45417	33770	16856160
70	DET-CLV	1	15.00*	822	-2053	.012	.49	1	24	11417	11188	4214040
	TOTAL	5	-	6778	1147	.125	.61	11	158	130256	104013	46354440

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-13. Midwest Triangle City- Pair Summary, Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
80	CHI-DET	2	17.00	4224	1561	.136	.71	5	74	66489	52923	22175908
80	CHI-CLV	1	21.00	2278	6108	.222	.75	3	38	44294	30984	13305545
80	DET-CLV	1	15.00*	822	-2686	-.014	.43	1	24	11417	11701	4435182
	TOTAL	4	-	7324	4983	.147	.67	9	136	122200	95608	39916635
90	CHI-DET	2	18.00	4120	1025	.130	.62	5	74	68667	55037	23281725
90	CHI-CLV	2	18.00	2496	791	.133	.73	3	38	41600	33247	13969035
90	DET-CLV	1	15.00*	822	-3319	-.038	.38	1	24	11417	12214	4656345
	TOTAL	5	-	7438	-1503	.112	.61	9	136	121684	100498	41907105
90	CHI-DET	2	18.00	4120	1025	.130	.62	5	74	68667	55037	23281725
90**	CHI-CLV	2	20.00	2360	3219	.171	.69	3	38	43704	32922	13969035
90	DET-CLV	1	15.00*	822	-3319	-.038	.38	1	24	11417	12214	4656345
	TOTAL	5	-	7302	925	.124	.60	9	136	123788	100173	41907105
100	CHI-DET	4	17.00	4236	4848	.175	.66	4	64	66678	51268	19510016
100	CHI-CLV	2	19.00	2428	276	.124	.64	3	38	42715	34517	14632512
100	DET-CLV	1	12.50*	984	-2711	-.003	.49	1	20	11389	11459	4877504
	TOTAL	7	-	7648	2413	.133	.63	8	122	120782	97244	39020032
110	CHI-DET	4	16.00	4428	816	.129	.63	4	64	65600	53743	20394529
110	CHI-CLV	2	20.00	2350	869	.133	.59	3	36	43519	34369	15295897
110	DET-CLV	1	12.50*	984	-3267	-.022	.45	1	20	11389	11896	5098632
	TOTAL	7	-	7762	-1582	.111	.59	8	120	120508	100008	40789058
110	CHI-DET	4	16.00	4428	816	.129	.63	4	64	65600	53743	20394529
110**	CHI-CLV	2	22.50	2202	3577	.172	.56	3	36	45875	34017	15295897
110	DET-CLV	1	12.50*	984	-3267	-.022	.45	1	20	11389	11896	5098632
	TOTAL	7	-	7614	1126	.126	.58	8	120	122864	99656	40789058

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-13. Midwest Triangle City-Pair Summary Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
120	CHI-DET	2	16.00	4368	769	.128	.61	4	60	64711	52422	21278816
120	CHI-CLV	2	21.00	2286	232	.123	.53	3	36	44450	35579	15959112
120	DET-CLV	1	12.50*	984	-3823	-.039	.41	1	20	11389	12332	5319704
	TOTAL	5	-	7638	-2822	.105	.55	8	116	120550	100333	42557632
120**	CHI-DET	2	17.00	4214	2740	.149	.59	4	60	66331	52072	21278816
120**	CHI-CLV	2	22.50	2202	1857	.146	.51	3	36	45875	35379	15959112
120	DET-CLV	1	12.50*	984	-3823	-.039	.41	1	20	11389	12332	5319704
	TOTAL	5	-	7400	774	.124	.53	8	116	123595	99783	42557632
121	CHI-DET	2	17.00	4214	939	.130	.58	4	60	66331	53825	21367228
121	CHI-CLV	2	22.50	2202	506	.127	.51	3	36	45875	36693	16025421
121	DET-CLV	1	12.50*	984	-4179	-.053	.41	1	20	11389	12676	5341807
	TOTAL	5	-	7400	-2734	.105	.53	8	116	123595	103194	42734456
121	CHI-DET	2	17.00	4214	939	.130	.58	4	60	66331	53825	21367228
121**	CHI-CLV	1	22.50	2156	13273	.395	.74	2	24	44917	25860	10683614
121	DET-CLV	1	12.50*	984	-4179	-.053	.41	1	20	11389	12676	5341807
	TOTAL	4	-	7354	10033	.179	.58	7	104	122637	92361	37392649
130	CHI-DET	1	16.00	4212	9295	.244	.74	3	44	62400	44106	16622079
130	CHI-CLV	1	20.00	2328	875	.132	.60	3	30	43111	33237	16622079
130	DET-CLV	1	12.50*	984	-4678	-.067	.38	1	20	11389	13067	5540693
	TOTAL	3	-	7524	5492	.151	.62	7	94	116900	90410	38784851
140	CHI-DET	1	15.00	4358	583	.126	.71	4	44	60528	47468	23046298
140	CHI-CLV	1	17.00	2494	4657	.210	.74	2	24	39257	28362	11523149
140	DET-CLV	1	12.50*	984	-5232	-.081	.35	1	20	11389	13502	5761574
	TOTAL	3	-	7836	8	.120	.64	7	88	111174	89332	40331021
150	CHI-DET	2	15.00	4438	8007	.219	.74	3	40	61639	43916	17946967
150	CHI-CLV	1	15.00	2634	518	.130	.73	2	24	36583	29588	11964645
150	DET-CLV	1	12.50*	984	-5786	-.094	.33	1	20	11389	13936	5982322
	TOTAL	4	-	8056	2739	.136	.64	6	84	109611	87440	35893934

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-13. Midwest Triangle City-Pair Summary, Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
160	CHI-DET	1	14.00	4484	3656	.164	.74	3	38	58126	44396	18608735
160	CHI-CLV	1	16.00	2564	956	.137	.67	2	24	37985	30313	12405824
160	DET-CLV	1	14.00*	846	-5415	-.073	.29	1	18	10967	13023	6202912
	TOTAL	3	-	7894	-803	.115	.62	6	80	107078	87732	37217471
160**	CHI-DET	3	15.00	4472	4674	.176	.67	3	42	62111	47363	18608735
160	CHI-CLV	1	16.00	2564	956	.137	.67	2	24	37985	30313	12405824
160	DET-CLV	1	14.00*	846	-5415	-.073	.29	1	18	10967	13023	6202912
	TOTAL	5	-	7882	215	.121	.59	6	84	111063	90699	37217471
170	CHI-DET	3	14.00	4622	426	.125	.65	3	42	59915	49057	19269954
170	CHI-CLV	1	17.00	2496	1292	.142	.61	2	24	39289	31043	12846636
170	DET-CLV	1	14.00*	846	-5929	-.085	.28	1	18	10967	13419	6423318
	TOTAL	5	-	7964	-4211	.095	.56	6	84	110171	93519	38539908
170**	CHI-DET	3	15.00	4474	2988	.154	.63	3	42	62139	48718	19269954
170**	CHI-CLV	1	18.00	2454	3002	.172	.60	2	24	40900	30943	12846636
170	DET-CLV	1	14.00*	846	-5929	-.085	.28	1	18	10967	13419	6423318
	TOTAL	5	-	7774	61	.120	.54	6	84	114006	93080	38539908
180	CHI-DET	3	14.00	4592	104	.121	.64	3	40	59526	48632	19930547
180	CHI-CLV	1	17.00	2496	164	.123	.58	2	24	39289	31932	13287032
180	DET-CLV	1	14.00*	846	-6443	-.095	.26	1	18	10967	13814	6643516
	TOTAL	5	-	7934	-6175	.085	.54	6	82	109782	94378	39861095
180**	CHI-DET	2	15.00	4436	4645	.172	.65	3	38	61611	46177	19930547
180**	CHI-CLV	1	18.00	2454	1875	.151	.57	2	24	40900	31832	13287032
180	DET-CLV	1	14.00*	846	-6443	-.095	.26	1	18	10967	13814	6643516
	TOTAL	4	-	7736	77	.120	.54	6	80	113478	91823	39861095

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-13. Midwest Triangle City-Pair Summary, Externally Blown Flap Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
190	CHI-DET	2	14.00	4570	395	.124	.63	3	38	59241	47699	20590444
190	CHI-CLV	1	18.00	2454	749	.132	.54	2	24	40900	32720	13726962
190	DET-CLV	1	14.00*	846	-6957	-.105	.25	1	18	10967	14208	6863481
	TOTAL	4	-	7870	-5813	.088	.52	6	80	111108	94627	41180887
190**	CHI-DET	2	15.00	4436	3070	.153	.61	3	38	61611	47394	20590444
190**	CHI-CLV	1	21.00	2256	4186	.188	.49	2	24	43867	32250	13726962
190	DET-CLV	1	14.00*	846	-6957	-.105	.25	1	18	10967	14208	6863481
	TOTAL	4	-	7538	299	.121	.50	6	80	116445	93852	41180887
200	CHI-DET	1	14.00	4474	4148	.163	.75	3	30	57996	42345	21249569
200	CHI-CLV	1	16.00	2542	146	.122	.64	2	20	37659	29844	14166380
200	DET-CLV	1	14.00*	846	-7469	-.114	.23	1	18	10967	14601	7083190
	TOTAL	3	-	7862	-3175	.103	.58	6	68	106622	86790	42499139
200	CHI-DET	1	14.00	4474	4148	.163	.75	3	30	57996	42345	21249569
200**	CHI-CLV	1	19.00	2362	4468	.190	.59	2	20	41554	29417	14166380
200	DET-CLV	1	14.00*	846	-7469	-.114	.23	1	18	10967	14601	7083190
	TOTAL	3	-	7682	1147	.126	.57	6	68	110517	86363	42499139

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-14. Midwest Triangle Summary, Externally Blown Flap Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	AVERAGE FARE CENTS PER MILE	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
50	5	09.43	6232	12.4	67	12	186	132	106	45
60	6	09.22	6404	15.0	64	11	168	133	104	44
61	6	09.00	6482	14.0	63	11	168	132	104	44
70*	5	08.56	6778	12.5	61	11	158	130	104	46
80	4	07.55	7324	14.7	67	9	136	122	96	40
90*	5	07.57	7302	12.4	60	9	136	124	100	42
100	7	07.00	7648	13.3	63	8	122	121	97	39
110*	7	07.22	7614	12.6	58	8	120	123	100	41
120*	5	07.61	7400	12.4	53	8	116	124	100	43
121*	4	07.69	7354	17.9	58	7	104	123	92	37
130	3	06.97	7524	15.1	62	7	94	117	90	39
140	3	06.33	7836	12.0	64	7	88	111	89	40
150	4	06.17	8056	13.6	64	6	84	110	87	36
160*	5	06.22	7882	12.1	59	6	84	111	91	37
170*	5	06.49	7774	12.0	54	6	84	114	93	39
180*	4	06.62	7736	12.0	54	6	80	113	92	40
190*	4	07.02	7538	12.1	50	6	80	116	94	41
200*	3	06.37	7682	12.6	57	6	68	111	86	42

* ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-15. Midwest Triangle Chicago - Detroit City-Pair, Augmentor Wing Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
40	1	32.00	1654	11940	.310	.71	4	58	49007	29522	13936929
40	2	27.00	2716	3970	.156	.67	7	102	67900	50726	24389626
40	3	27.00	2844	5453	.170	.68	7	104	71100	52443	24389626
40	4	28.50	2566	1127	.130	.59	7	108	67714	53384	24389626
50	1	30.00	1936	13664	.324	.67	4	58	53778	32082	14835872
50	2	22.50	3436	1866	.138	.67	7	102	71583	55662	25962775
50	3	22.50	3536	2170	.139	.68	7	104	73667	57442	25962775
50	4	27.00	2788	13976	.287	.66	5	84	69700	45685	18544840
60	1	27.00	2446	17473	.366	.70	4	58	61150	35159	15734074
60	2	22.50	3420	6467	.181	.65	6	88	71250	52007	23601111
60	3	22.50	3532	7135	.187	.65	6	90	73583	53671	23601111
60	4	24.00	3256	12229	.258	.65	5	84	72356	49479	19667592
61	1	27.00	2446	16308	.345	.69	4	58	61150	36141	16072059
61	2	22.50	3424	4796	.164	.64	6	88	71333	53486	24108088
61	3	22.50	3532	5345	.169	.64	6	90	73583	55187	24108088
61	4	22.50	3520	2516	.143	.60	6	96	73333	57766	24108088
70	1	24.00	2916	16768	.340	.72	4	58	64800	38895	16876538
70	2	21.00	3668	11175	.237	.71	5	74	71322	48726	21095673
70	3	21.00	3776	1381	.132	.60	6	90	73422	58337	25314807
70	4	22.50	3452	7722	.201	.60	5	82	71917	52774	21095673
80	1	21.00	3440	15311	.311	.74	4	58	66889	41957	17770591
80	2	16.00	4380	190	.122	.74	5	74	64889	52673	22213238
80	3	22.50	3472	6792	.188	.56	5	78	72333	53516	22213238
80	4	19.50	3966	4029	.160	.62	5	80	71608	55554	22213238

Table H-15. Midwest Triangle Chicago - Detroit City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
90	1	18.00	3912	10199	.241	.75	4	58	65200	44897	18664834
90	2	18.00	4120	1628	.135	.62	5	74	68667	54408	23331042
90	3	21.00	3726	3231	.151	.53	5	78	72450	56588	23331042
90	4	19.50	3970	944	.129	.55	5	80	71681	58106	23331042
100	1	16.00	4212	4371	.170	.73	4	58	62400	47440	19559262
100	2	19.50	3888	762	.127	.53	5	74	70200	56202	24449077
100	3	21.00	3648	12002	.256	.59	4	62	70933	48343	19559262
100	4	17.00	4236	5394	.181	.66	4	64	66678	50695	19559262
110	1	16.00	4212	2031	.142	.66	4	58	62400	49295	20453867
110	2	18.00	4108	7999	.207	.62	4	60	68467	49395	20453867
110	3	18.00	4142	6526	.191	.61	4	62	69033	51434	20453867
110	4	16.00	4428	1380	.135	.63	4	64	65600	53147	20453867
120	1	17.00	4058	1523	.136	.58	4	58	63876	50796	21348643
120	2	16.00	4368	1303	.134	.61	4	60	64711	51850	21348643
120	3	19.50	3848	19438	.389	.70	3	46	69478	41372	16011482
120	4	16.00	4418	38	.120	.59	4	62	65452	53856	21348643
121	1	18.00	3912	14779	.324	.73	3	44	65200	41717	16078597
121	2	17.00	4214	1471	.135	.58	4	60	66331	53254	21438129
121	3	18.00	4130	3332	.154	.57	4	60	68833	53895	21438129
121	4	18.00	4134	2229	.143	.55	4	62	68900	55065	21438129
130	1	16.00	4212	9706	.249	.74	3	44	62400	43663	16682685
130	2	18.00	4108	1736	.137	.53	4	60	68467	54689	22243579
130	3	17.00	4196	12163	.282	.70	3	46	66048	44853	16682685
130	4	18.00	4138	96	.121	.51	4	62	68967	56829	22243579

Table H-15. Midwest Triangle Chicago - Detroit City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
140	1	15.00	4358	1000	.130	.71	4	44	60528	47001	23138669
140	2	17.00	4142	14251	.302	.74	3	40	65198	41552	17354001
140	3	17.00	4228	476	.125	.56	4	54	66552	53549	23138669
140	4	18.00	4132	346	.123	.51	4	58	68867	55994	23138669
150	1	16.00	4212	1264	.132	.64	4	44	62400	48125	24033900
150	2	15.00	4438	8392	.223	.74	3	40	61639	43488	18025425
150	3	17.00	4184	9826	.241	.63	3	44	65859	46274	18025425
150	4	19.50	3904	171	.122	.45	4	58	70489	57307	24033900
160	1	14.00	4484	4037	.168	.74	3	38	58126	43967	18696948
160	2	17.00	4128	12242	.265	.68	3	38	64978	42614	18696948
160	3	15.00	4472	5099	.180	.67	3	42	62111	46890	18696948
160	4	22.50	3364	113	.121	.38	4	56	70083	56475	24929264
170	1	14.00	4484	2447	.148	.69	3	38	58126	45194	19368562
170	2	15.00	4428	6512	.195	.69	3	38	61500	44503	19368562
170	3	14.00	4622	862	.130	.65	3	42	59915	48568	19368562
170	4	22.50*	3364	-2147	.102	.35	4	56	70083	58250	25824749
180	1	14.00	4484	858	.129	.66	3	38	58126	46419	20040257
180	2	14.00	4566	2318	.146	.67	3	38	59189	46021	20040257
180	3	14.00	4592	525	.126	.64	3	40	59526	48151	20040257
180	4	24.00*	3098	-3356	.092	.32	4	54	68844	57734	26720342
190	1	15.00	4346	1821	.139	.60	3	38	60361	47327	20712024
190	2	14.00	4570	794	.128	.63	3	38	59241	47234	20712024
190	3	15.00	4452	1516	.136	.59	3	40	61833	49105	20712024
190	4	24.00*	3098	-5553	.075	.30	4	54	68844	59447	27616033
200	1	14.00	4474	4462	.166	.75	3	30	57996	41958	21383854
200	2	15.00	4436	1903	.140	.58	3	38	61611	48131	21383854
200	3	15.00	4430	1346	.134	.58	3	38	61528	48605	21383854
200	4	24.00*	3088	-6226	.072	.30	4	52	68622	59413	28511806

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-16. Midwest Triangle Chicago - Detroit Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	3	27.00	2844	17.0	68	7	104	71	52	24
50	3	22.50	3536	13.9	68	7	104	74	57	26
60	3	22.50	3532	18.7	65	6	90	74	54	24
61	3	22.50	3532	16.9	64	6	90	74	55	24
70	3	21.00	3776	13.2	60	6	90	73	58	25
80	2	16.00	4380	12.2	74	5	74	65	53	22
90	2	18.00	4120	13.5	62	5	74	69	54	23
100	4	17.00	4236	18.1	66	4	64	67	51	20
110	4	16.00	4428	13.5	63	4	64	66	53	20
120	4	16.00	4418	12.0	59	4	62	65	54	21
121	2	17.00	4214	13.5	58	4	60	66	53	21
130	1	16.00	4212	24.9	74	3	44	62	44	17
140	1	15.00	4359	13.0	71	4	44	61	47	23
150	2	15.00	4438	22.3	74	3	40	62	43	18
160	1	14.00	4484	16.8	74	3	38	58	44	19
170	3	14.00	4622	13.0	65	3	42	60	49	19
180	3	14.00	4592	12.6	64	3	40	60	48	20
190	2	14.00	4570	12.8	63	3	38	59	47	21
200	1	14.00	4474	16.6	75	3	30	58	42	21

Table H-17. Midwest Triangle Chicago - Cleveland City-Pair, Augmentor Wing Concept

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
40	1	30.00	1624	5368	.205	.70	4	58	45111	32199	13936929
40	2	34.50	1252	8813	.307	.68	3	46	39994	25523	10452697
40	3	31.50	1630	6019	.216	.66	4	62	47542	33977	13936929
50	1	24.00	2088	2904	.163	.72	4	58	46400	35464	14835872
50	2	30.00	1710	6334	.215	.63	4	54	47500	33135	14835872
50	3	30.00	1778	5666	.205	.59	4	60	49389	35691	14835872
60	1	24.00	2088	257	.124	.60	4	58	46400	37625	15734074
60	2	25.50	2050	3878	.175	.63	4	54	48403	36007	15734074
60	3	25.50	2058	1485	.141	.57	4	60	48592	38588	15734074
61	1	25.50	1988	10132	.306	.74	3	44	46939	30281	12054044
61	2	24.00	2128	1371	.139	.65	4	54	47289	37217	16072059
61	3	25.50	2060	232	.123	.56	4	60	48639	39706	16072059
70	1	21.00	2282	1644	.142	.74	4	44	44372	33592	16876538
70	2	25.50	2020	1040	.134	.55	4	52	47694	37518	16876538
70	3	24.00	2162	201	.123	.57	4	54	48044	38707	16876538
80	1	21.00	2278	6469	.228	.75	3	38	44294	30610	13327943
80	2	22.50	2204	7967	.252	.72	3	38	45917	30735	13327943
80	3	27.00	1960	275	.123	.47	4	52	49000	39105	17770591
90	1	18.00	2464	1036	.136	.72	3	38	41067	32453	13998625
90	2	18.00	2496	1171	.139	.73	3	38	41600	32850	13998625
90	3	25.50	2026	6353	.221	.54	3	42	47836	33904	13998625
100	1	19.00	2400	581	.129	.63	3	38	42222	33700	14669446
100	2	19.00	2428	668	.130	.64	3	38	42715	34106	14669446
100	3	21.00	2288	488	.127	.54	3	42	44489	36059	14669446

Table H-17. Midwest Triangle Chicago - Cleveland City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
110	1	20.00	2340	75	.121	.56	3	38	43333	34954	15340401
110	2	19.00	2418	108	.122	.61	3	36	42539	34126	15340401
110	3	22.50	2208	1667	.144	.50	3	40	46000	36028	15340401
120	1	22.50	2176	706	.130	.48	3	38	45333	35959	16011482
120	2	21.00	2286	624	.129	.53	3	36	44450	35158	16011482
120	3	24.00	2120	1163	.136	.44	3	40	47111	37280	16011482
121	1	22.50	2156	13532	.400	.74	2	24	44917	25582	10719065
121	2	22.50	2202	906	.132	.51	3	36	45875	36268	16078597
121	3	25.50	2004	173	.122	.41	3	40	47317	38439	16078597
130	1	19.00	2396	84	.121	.61	3	30	42152	33036	16682685
130	2	24.00	2082	44	.121	.44	3	36	46267	37192	16682685
130	3	27.00	1884	116	.122	.38	3	38	47100	37952	16682685
140	1	17.00	2494	4929	.214	.74	2	24	39257	28065	11569334
140	2	25.50	1884	11231	.335	.56	2	24	44483	26989	11569334
140	3	28.50*	1802	-992	.107	.34	3	38	47553	39150	17354001
150	1	15.00	2634	797	.135	.73	2	24	36583	29281	12016950
150	2	24.00	2014	10052	.305	.56	2	24	44756	28198	12016950
150	3	28.50*	1788	-1484	.102	.33	3	36	47183	38909	18025425
160	1	16.00	2564	1241	.142	.67	2	24	37985	29996	12464632
160	2	21.00	2212	6696	.239	.58	2	24	43011	29567	12464632
160	3	28.50*	1788	-3175	.082	.31	3	36	47183	40236	18696948
170	1	16.00	2564	119	.122	.63	2	24	37985	30876	12912374
170	2	19.00	2358	3682	.183	.58	2	24	41483	30811	12912374
170	3	28.50*	1788	-4863	.064	.29	3	36	47183	41561	19368562

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-17. Midwest Triangle Chicago - Cleveland City-Pair, Augmentor Wing Concept (Continued)

CAP	NO. OF SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
180	1	17.00	2496	463	.128	.58	2	24	39289	31593	13360171
180	2	18.00	2424	1305	.142	.56	2	24	40400	31863	13360171
180	3	28.50*	1788	-6550	.048	.28	3	36	47183	42884	20040257
190	1	18.00	2454	1054	.137	.54	2	24	40900	32371	13808016
190	2	18.00	2426	198	.123	.53	2	24	40433	32760	13808016
190	3	28.50*	1788	-8234	.032	.26	3	36	47183	44205	20712024
200	1	16.00	2542	398	.126	.64	2	20	37659	29544	14255903
200	2	19.00	2366	398	.126	.49	2	24	41624	33508	14255903
200	3	28.50*	1788	-9917	.017	.25	3	36	47183	45524	21383854

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-18. Midwest Triangle Chicago - Cleveland Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	3	31.50	1630	21.6	66	4	62	48	34	14
50	1	24.00	2088	16.3	72	4	58	46	35	15
60	1	24.00	2088	12.4	60	4	58	46	38	16
61	2	24.00	2128	13.9	65	4	54	47	37	16
70	1	21.00	2282	14.2	74	4	44	44	34	17
80	1	21.00	2278	22.8	75	3	38	44	31	13
90	2	18.00	2496	13.9	73	3	38	42	33	14
100	2	19.00	2428	13.0	64	3	38	43	34	15
110	2	19.00	2418	12.2	61	3	36	43	34	15
120	2	21.00	2286	12.9	53	3	36	44	35	16
121	2	22.50	2202	13.2	51	3	36	46	36	16
130	1	19.00	2396	12.1	61	3	30	42	33	17
140	1	17.00	2494	21.4	74	2	24	39	28	12
150	1	15.00	2634	13.5	73	2	24	37	29	12
160	1	16.00	2564	14.2	67	2	24	38	30	12
170	1	16.00	2564	12.2	63	2	24	38	31	13
180	1	17.00	2496	12.8	58	2	24	39	32	13
190	1	18.00	2454	13.7	54	2	24	41	32	14
200	1	16.00	2542	12.6	64	2	20	38	30	14

Table H-19. Midwest Triangle Detroit - Cleveland Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	ONE-WAY FARE (DOLLARS)	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	1	16.50*	688	09.9	72	1	24	11	9	3
50	1	15.00*	822	09.9	68	1	24	11	10	4
60	1	15.00*	822	06.4	57	1	24	11	10	4
61	1	15.00*	822	04.6	56	1	24	11	11	4
70	1	15.00*	822	02.0	49	1	24	11	11	4
80	1	15.00*	822	-00.6	43	1	24	11	12	4
90	1	15.00*	822	-03.0	38	1	24	11	12	5
100	1	12.50*	984	00.3	49	1	20	11	11	5
110	1	12.50*	984	-01.5	45	1	20	11	12	5
120	1	12.50*	984	-03.3	41	1	20	11	12	5
121	1	12.50*	984	-04.7	41	1	20	11	13	5
130	1	12.50*	984	-06.0	38	1	20	11	13	6
140	1	12.50*	984	-07.4	35	1	20	11	13	6
150	1	12.50*	984	-08.7	33	1	20	11	14	6
160	1	14.00*	846	-06.7	29	1	18	11	13	6
170	1	14.00*	846	-07.8	28	1	18	11	13	6
180	1	14.00*	846	-08.9	26	1	18	11	14	7
190	1	14.00*	846	-09.8	25	1	18	11	14	7
200	1	14.00*	846	-10.7	23	1	18	11	14	7

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-20. Midwest Triangle City-Pair Summary, Augmentor Wing Concept

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
40	CHI-DET	3	27.00	2844	5453	.170	.68	7	104	71100	52443	24389626
40	CHI-CLV	3	31.50	1630	6019	.216	.66	4	62	47542	33977	13936929
40	DET-CLV	1	16.50*	688	-337	.099	.72	1	24	10511	8962	3484232
	TOTAL	7	-	5162	11135	.178	.78	12	190	129153	95382	41810787
50	CHI-DET	3	22.50	3536	2170	.139	.68	7	104	73667	57442	25962775
50	CHI-CLV	1	24.00	2088	2904	.163	.72	4	58	46400	35464	14835872
50	DET-CLV	1	15.00*	822	-353	.099	.68	1	24	11417	9762	3708968
	TOTAL	5	-	6446	4721	.143	.69	12	186	131484	102668	44507615
60	CHI-DET	3	22.50	3532	7135	.187	.65	6	90	73583	56371	23601111
60	CHI-CLV	1	24.00	2088	257	.124	.60	4	58	46400	37625	15734074
60	DET-CLV	1	15.00*	822	-993	.064	.57	1	24	11417	10280	3933518
	TOTAL	5	-	6442	6399	.139	.62	11	172	131400	104276	43268703
61	CHI-DET	3	22.50	3532	5345	.169	.64	6	90	73583	55187	24108088
61	CHI-CLV	2	24.00	2128	1371	.139	.65	4	54	47289	37217	16072059
61	DET-CLV	1	15.00*	822	-1341	.046	.56	1	24	11417	10582	4018015
	TOTAL	6	-	6482	5375	.146	.63	11	168	132289	102986	44198162
70	CHI-DET	3	21.00	3776	1381	.132	.60	6	90	73422	58337	25314807
70	CHI-CLV	1	21.00	2282	1644	.142	.74	4	44	44372	33592	16876538
70	DET-CLV	1	15.00*	822	-1906	.020	.49	1	24	11417	11038	4219135
	TOTAL	5	-	6880	1119	.125	.62	11	158	129211	102967	46410480
80	CHI-DET	2	16.00	4380	190	.122	.74	5	74	64889	52673	22213238
80	CHI-CLV	1	21.00	2278	6469	.228	.75	3	38	44294	30610	13327943
80	DET-CLV	1	15.00*	822	-2533	-.006	.43	1	24	11417	11545	4442648
	TOTAL	4	-	7480	4126	.142	.69	9	136	120600	94828	39983829
90	CHI-DET	2	18.00	4120	1628	.135	.62	5	74	68667	54408	23331042
90	CHI-CLV	2	18.00	2496	1171	.139	.73	3	38	41600	32850	13998625
90	DET-CLV	1	15.00*	822	-3159	-.030	.38	1	24	11417	12050	4666208
	TOTAL	5	-	7438	-360	.118	.61	9	136	121684	99308	41995875

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

Table H-20. Midwest Triangle City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
90	CHI-DET	2	18.00	4120	1628	.135	.62	5	74	68667	54408	23331042
90**	CHI-CLV	2	19.00	2428	2448	.159	.71	3	38	42715	32688	13998625
90	DET-CLV	1	15.00*	822	-3159	-.030	.38	1	24	11417	12050	4666208
	TOTAL	5	-	7370	917	.124	.60	9	136	122799	99146	41995875
100	CHI-DET	4	17.00	4236	5394	.181	.66	4	64	66678	50695	19559262
100	CHI-CLV	2	19.00	2428	668	.130	.64	3	38	42715	34106	14669446
100	DET-CLV	1	12.50*	984	-2572	.003	.49	1	20	11389	11314	4889815
	TOTAL	7	-	7648	3490	.139	.63	8	122	120782	96115	39118523
110	CHI-DET	4	16.00	4428	1380	.135	.63	4	64	65600	53147	20453867
110	CHI-CLV	2	19.00	2418	108	.122	.61	3	36	42539	34126	15340401
110	DET-CLV	1	12.50*	984	-3123	-.015	.45	1	20	11389	11744	5113467
	TOTAL	7	-	7830	-1635	.111	.59	8	120	119528	99017	40907735
110	CHI-DET	4	16.00	4428	1380	.135	.63	4	64	65600	53147	20453867
110**	CHI-CLV	2	21.00	2286	2334	.154	.58	3	36	44450	33812	15340401
110	DET-CLV	1	12.50*	984	-3123	-.015	.45	1	20	11389	11744	5113467
	TOTAL	7	-	7698	591	.123	.58	8	120	121439	98703	40907735
120	CHI-DET	4	16.00	4418	38	.120	.59	4	62	65452	53856	21348643
120	CHI-CLV	2	21.00	2286	624	.129	.53	3	36	44450	35158	16011482
120	DET-CLV	1	12.50*	984	-3674	-.033	.41	1	20	11389	12173	5337161
	TOTAL	7	-	7688	-3012	.104	.54	8	118	121291	101187	42697286
120**	CHI-DET	2	17.00	4214	3274	.154	.59	4	60	66331	51500	21348643
120	CHI-CLV	2	21.00	2286	624	.129	.53	3	36	44450	35158	16011482
120	DET-CLV	1	12.50*	984	-3674	-.033	.41	1	20	11389	12173	5337161
	TOTAL	5	-	7484	224	.147	.54	8	116	122170	98831	42697286

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-20. Midwest Triangle City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
121	CHI-DET	2	17.00	4214	1471	.135	.58	4	60	66331	53254	21438129
121	CHI-CLV	2	22.50	2202	902	.132	.51	3	36	45875	36268	16078597
121	DET-CLV	1	12.50*	984	-4032	-.047	.41	1	20	11389	12519	5359532
	TOTAL	5	-	7400	-1659	.111	.53	8	116	123595	102041	42876258
121	CHI-DET	2	17.00	4214	1471	.135	.58	4	60	66331	53254	21438129
121**	CHI-CLV	1	22.50	2156	13532	.400	.74	2	24	44917	25582	10719065
121	DET-CLV	1	12.50*	984	-4032	-.047	.41	1	20	11389	12519	5359532
	TOTAL	4	-	7354	10971	.184	.58	7	104	122637	91355	37516726
130	CHI-DET	1	16.00	4212	9706	.249	.74	3	44	62400	43663	16682685
130	CHI-CLV	1	19.00	2396	84	.121	.61	3	30	42152	33036	16682685
130	DET-CLV	1	12.50*	984	-4527	-.060	.38	1	20	11389	12905	5560895
	TOTAL	3	-	7592	5263	.149	.62	7	94	115941	89604	38926265
140	CHI-DET	1	15.00	4358	1000	.130	.71	4	44	60528	47001	23138669
140	CHI-CLV	1	17.00	2494	4929	.214	.74	2	24	39257	28065	11569334
140	DET-CLV	1	12.50*	984	-5076	-.074	.35	1	20	11389	13333	5784667
	TOTAL	3	-	7836	853	.124	.64	7	88	111174	88399	40492670
150	CHI-DET	2	15.00	4438	8392	.223	.74	3	40	61639	43488	18025425
150	CHI-CLV	1	15.00	2634	797	.135	.73	2	24	36583	29281	12016950
150	DET-CLV	1	12.50*	984	-5624	-.087	.33	1	20	11389	13760	6008475
	TOTAL	4	-	8056	3565	.141	.64	6	84	109611	86529	86050850
160	CHI-DET	1	14.00	4484	4037	.168	.74	3	38	58126	43967	18696948
160	CHI-CLV	1	16.00	2564	1241	.142	.67	2	24	37985	29996	12464632
160	DET-CLV	1	14.00*	846	-5265	-.067	.29	1	18	10967	12858	6232316
	TOTAL	3	-	7894	13	.120	.62	6	80	107078	86821	37393895

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-20. Midwest Triangle City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
170	CHI-DET	3	14.00	4622	862	.130	.65	3	42	59915	48568	19368562
170	CHI-CLV	1	16.00	2564	119	.122	.63	2	24	37985	30876	12912374
170	DET-CLV	1	14.00*	846	-5776	-.078	.28	1	18	10967	13248	6456187
	TOTAL	5	-	8032	-4795	.092	.56	6	84	108867	92692	38737123
170	CHI-DET	3	14.00	4622	862	.130	.65	3	42	59915	48568	19368562
170**	CHI-CLV	1	20.00	2324	5740	.219	.57	2	24	43037	30306	12912374
170	DET-CLV	1	14.00*	846	-5776	-.078	.28	1	18	10967	13248	6456187
	TOTAL	5	-	7792	826	.124	.55	6	84	113919	92122	38737123
180	CHI-DET	3	14.00	4592	525	.126	.64	3	40	59526	48151	20040257
180	CHI-CLV	1	17.00	2496	463	.128	.58	2	24	39289	31593	13360171
180	DET-CLV	1	14.00*	846	-6286	-.089	.26	1	18	10967	13636	6680086
	TOTAL	5	-	7934	-5298	.090	.54	6	82	109782	93380	40080514
180**	CHI-DET	2	14.00	4566	2318	.146	.67	3	38	59189	46021	20040257
180**	CHI-CLV	1	20.00	2324	4619	.197	.54	2	24	43037	31185	13360171
180	DET-CLV	1	14.00*	846	-6286	-.089	.26	1	18	10967	13636	6680086
	TOTAL	4	-	7736	651	.123	.54	6	80	113193	90842	40080514
190	CHI-DET	2	14.00	4570	794	.128	.63	3	38	59241	47234	20712024
190	CHI-CLV	1	18.00	2454	1054	.137	.54	2	24	40900	32371	13808016
190	DET-CLV	1	14.00*	846	-6796	-.098	.25	1	18	10967	14025	6904008
	TOTAL	4	-	7870	-4948	.093	.52	6	80	111108	93630	41424048
190**	CHI-DET	2	15.00	4436	3469	.157	.61	3	38	61611	46929	20712024
190**	CHI-CLV	1	20.00	2324	3500	.176	.51	2	24	43037	32062	13808016
190	DET-CLV	1	14.00*	846	-6796	-.098	.25	1	18	10967	14025	6904008
	TOTAL	4	-	7606	173	.121	.50	6	80	115615	93016	41424048

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-20. Midwest Triangle City-Pair Summary, Augmentor Wing Concept (Continued)

CAP	CITY PAIR	SERV. PATHS	FARE	PASS	EX.PROFIT	ROI	LOAD FACTOR	FLEET SIZE	DEP	REVENUE	OPER COST	A/C INVEST
200	CHI-DET	1	14.00	4474	4462	.166	.75	3	30	57996	41958	21383854
200	CHI-CLV	1	16.00	2542	398	.126	.64	2	20	37659	29544	14255903
200	DET-CLV	1	14.00*	846	-7305	-.107	.23	1	18	10967	14413	7127951
	TOTAL	3	-	7862	-2445	.106	.58	6	68	106622	85915	42767708
200	CHI-DET	1	14.00	4474	4462	.166	.75	3	30	57996	41958	21383854
200**	CHI-CLV	1	18.00	2432	3533	.175	.61	2	20	40533	29282	14255903
200	DET-CLV	1	14.00*	846	-7305	-.107	.23	1	18	10967	14413	7127951
	TOTAL	3	-	7752	690	.123	.57	6	68	109496	85653	42767708

* NO FARE PRODUCES FAIR RETURN ON INVESTMENT. CHOSEN FARE MINIMIZES LOSS

** ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS

Table H-21. Midwest Triangle Summary, Augmentor Wing Concept

AIRCRAFT CAPACITY	NUMBER OF SERVICE PATHS	AVERAGE FARE CENTS PER MILE	PASSENGERS CARRIED PER DAY	RETURN ON INVESTMENT %	AVERAGE LOAD FACTOR %	FLEET SIZE	NUMBER OF DEPARTURES PER DAY	REVENUE DOLLARS/DAY (000)	OPERATING COST DOLLARS/DAY (000)	AIRCRAFT INVESTMENT (MILLIONS)
40	7	11.20	5162	17.8	68	12	190	129	95	42
50	5	09.10	6446	14.3	69	12	186	131	103	45
60	5	09.10	6442	13.9	62	11	172	131	104	43
61	6	09.00	6482	14.6	63	11	168	132	103	44
70	5	08.30	6880	12.5	62	11	158	129	103	46
80	4	07.30	7480	14.2	69	9	136	121	95	40
90*	5	07.42	7370	12.4	60	9	136	123	99	42
100	7	07.00	7648	13.9	63	8	122	121	96	39
110*	7	07.03	7698	12.3	58	8	120	121	99	41
120*	5	07.41	7484	14.7	54	8	116	122	99	43
121*	4	07.69	7354	18.4	58	7	104	123	91	38
130	3	06.80	7592	14.9	62	7	94	116	90	39
140	3	06.30	7836	12.4	64	7	88	111	88	40
150	4	06.20	8056	14.1	64	6	84	110	87	36
160	3	06.00	7894	12.0	62	6	80	107	87	37
170*	5	06.50	7792	12.4	55	6	84	114	92	39
180*	4	06.64	7736	12.3	54	6	80	113	91	40
190*	4	06.89	7606	12.1	50	6	80	116	93	41
200*	3	06.24	7752	12.3	57	6	68	109	86	43

* ADJUSTED TO PRODUCE FAIR RETURN ON INVESTMENT WITH MINIMUM LOSS OF PASSENGERS